APPENDIX I

REVISION NO. II

STAT

ECP NO.	DESCRIPTION	TARGET PRICE	CEILING PRICE
STAT 22-1-1			
22-2-1			
22-3-1			
22-4-1			
22-5-1			
22-6-1	Improved Distance Measuring for ARC-50		
22-7-2	ARC-50 Ground Stations		
22-8-1	Liquid Oxygen System Installation in Vehicles #132 and #133		
22-9-2	Lightning Tests		
22-10	Suit Vent Air System Regulator		
22-11-1	Oxygen System Balance Valve		
22-12-1	A-12 Parachute Improvement Program		
22-13-1	Periscope Improvement Program		
22-14	Revised INS Rack Installation		
STAT 22-15			
22-16	Oxygen System Low Pressure Warning Light		
22-17	Replace Control Stick Grips on A-12 and AF-12		
22-18-1	Retrofit LOX System - A-12's (Already accomplished on #132 and #133)		
STAT 22-19			

* Redetermined Item.

STAT

ECP NO.	DESCRIPTION	TARGET PRICE	CEILING PRICE
STAT 22-20			
22-21			
22-22-1	Tacan in all A-12's except #121 and 124. See ECP 22-75 for #124		
STAT 22-23			
22-24	Drag Chute Deploy Handle		
22-25	Aero-Med Instrument		
22-26	Periscope Projector Film Destruct System		
22-27-1	Map Case Destruct System		
STAT 22-28-1			
22-29-1	Pilot Voice Recorder		
22-30-1	Compressor Inlet Pressure Indicating System		
22-31-1	SR-3 Improved Gyro Reference Heading System Except #124. See ECP 22-74.		
22-32-1	Improved Fire Warning System		
22-33	Structural Strength		
22-34	Chine Mod and Refrig.		
22-35-1	All Altitude Fuel Quantity System		
22-36-1	Airplane Control System Checkout Cart (4)		
22-37-1	World Wide Capability Flight Tests		
22-38	Increased Fuel Quantity Study		
22-39	New Servos-Inter-System Leakage		
22-40	Dual Initiator Qual.		
22-41	Stall Warning System		
22-42	Six Additional Cap Nap (LeCroix)		

Orig & Folder #2

* Redetermined Item.

STAT

ECP NO.	DESCRIPTION	TARGET PRICE	CEILING PRICE
STAT 22-43-1	Replace [redacted] and install new Control Unit		
22-44	Improve Pilot Fuel Control Capability		
22-45	Enlarged LN_2		
22-46	Fuel Remaining Instrumentation		
22-47	ARC-50 ADF Antenna Study Only		
22-48-1	ADP Air Inlet Control		
22-49-1	Fuel Management Revision		
22-50-1	JC-130 Command XMTR and Recovery Chute Systems		
22-51	AIC Prototype Changes		
STAT 22-52	[redacted]		
22-53			
22-54	Type I Camera Provisions		
22-55	A-12 Mod, Study LN_2 Incr. & Stl. Gudgeon		
22-56-1	Roll, Pitch and Yaw Study		
22-57-1	Hydraulic Rework - TEB Can		
22-58-1	Engine Oil Pressure Transmitter Design Improvement Testing		
22-59	INS Hatch		
22-60	Inlet Control Instrumentation		
22-61	Not Used		
22-62	AF-12 Seat and Parachute Rework Program		
22-63-1	Fuel Cooling System		
22-64-1	Fuel Quantity Modification to Five KC-135's		

* Redetermined Item.

STAT

ECP NO.	DESCRIPTION	TARGET PRICE	CEILING PRICE
22-65-1	ARC-50 AY Installation Kits for Five KC-135's		
22-66-1	Alternate Steering System for AF-12's		
STAT 22-67	[redacted]		
22-68-1	Retrofit of Production ADP Inlet Control into S/N's 134 and 135		
22-69	Drag Chute Improvements	D	
22-70	Improved Wheels and Brakes for A-12		
22-71-1	Forward Look Periscope		
22-72-1	Retrofit of Production ADP Inlet Control into all YF-12A's		
22-73-1	Hydrogen Ignition System for YF-12A's		
22-74	SR-3, #124, Breakout of 1 ship from 22-31 for later installation		
22-75	TACAN, #124. --- Breakout of 1 ship from ECP 22-22 for later installation		
STAT 22-76	[redacted] #124, 129, 131. Breakout of 3 ships from ECP 22-43-1 for later installation		
	TOTAL.....		

* Redetermined Item.

S U M M A R Y

I. REDETERMINED ITEMS

ECP NO.	TARGET PRICE	CEILING PRICE
22-1-1		
22-2-1		
22-3-1		
22-4-1		
22-5-1		
22-6-1		
22-7-2		
22-8-1		
22-9-2		
22-10		
22-11-1		
22-12-1		
22-13-1		
22-14		
22-15		
22-16		
22-19		
22-20		
22-21		
22-24		
22-25		
22-26		
22-33		
22-34		
22-38		
22-39		
22-40		
22-42		
22-44		
22-45		
22-46		
22-47		
22-48-1		
22-52		
22-53		
22-55		
22-59		
22-60		
22-61		
22-62		
22-63		
22-67		
22-69		
22-70		
SUB TOTAL		

STAT

II. ITEMS TO BE REDETERMINED

ECP NO.	TARGET PRICE	CEILING PRICE
22-17		
22-18		
22-22-1		
22-23		
22-27-1		
22-28-1		
22-29-1		
22-30-1		
22-31-1		
22-32-1		
22-35-1		
22-36-1		
22-37-1		
22-41		
22-43-1		
22-49-1		
22-50-1		
22-51		
22-54		
22-56-1		
22-57-1		
22-58-1		
22-64-1		
22-65-1		
22-66-1		
22-68-1		
22-71-1		
22-72-1		
22-73-1		
22-74		
22-75		
22-76		
SUB TOTAL		
GRAND TOTAL		

STAT

25X1 [redacted] SECRET [redacted] [redacted] 25X1
Copy 7 of 10 25X1

NRO

MEMORANDUM FOR : Director, [redacted] National Reconnaissance Office 25X1

SUBJECT : Approval of Engineering Changes to OXCART

1. Reference is made to your letter of 5 February 1965 25X1
[redacted] requesting a monthly report on new OXCART ECP's approved by Director, Program B, in accordance with the limitation set down and also a progress report on previously approved changes. This memorandum restricts itself to reporting on ECP's approved since 5 February. A separate report will be made on those previously approved. Each ECP included in this report was under [redacted] 25X1

2. Director, Program B, approved the ECP's listed below on 2 March 1965:

ECP 21-2 — New antenna for ARC-50 DF capability. Budgetary estimate [redacted] This ECP covers Phase I which is to design, develop and test a prototype. This is required to increase range and to improve rendezvous capability with the tankers. 25X1

25X1 [redacted]

ECP 22-29 — Pilot Voice Recorder. This is a recorder combined with a destruct system for all A-12 aircraft, and covers selection of the recorder, development of a destruct system, and production of kits for installation. This had been previously requested by Director, Program B, and the ECP represents the formal proposal. Estimated cost is [redacted] This includes installation and spares. This change will increase recording time to an acceptable level. 25X1

25X1

[redacted] 25X1
SECRET

GROUP 1
Excluded from automatic downgrading and declassification

25X1 [redacted] SECRET [redacted] 25X1 25X1

ECP 22-41 Stall Warning System. This was requested by by Director, Program B, after the loss of aircraft 123 and is designed to prevent possible loss due to stall by providing a positive warning of an approaching stall. It is intended for all A-12 and AF-12 aircraft. Cost estimate is [redacted] 25X1

ECP 22-51 Modifications to the Lockheed Inlet Control. The ECP covers design, development and manufacture of components required to incorporate inlet control modifications on aircraft 129, 130 and 131. The change will reduce calibration time considerably and will provide more accurate and more reliable Mach sensors. Estimated cost is [redacted] 25X1

ECP 22-54 Modification to aircraft 121, 122 and 131 for Type I camera installation. (Other aircraft are already so configured). This will enable all aircraft to be capable of flying operational missions with Type I camera. Estimated cost is [redacted] 25X1

ECP 22-56 Measurement of roll, pitch and yaw. This covers the design and manufacture of one comparator system and development of computor program required to analyze data of Type I and Type II camera systems. It is intended to improve both the performance and the quality of the systems. Estimated cost is [redacted] 25X1

3. Progress of these ECP's will be reported at a later date.

JACK C. LEDFORD
Colonel, USAF
Director, Program B, [redacted] NRO 25X1

25X1

[redacted] SECRET [redacted]

25X1

25X1 [redacted] SECRET [redacted] [redacted] 25X1
25X1

25X1 [redacted] SA/D/TECH/OSA [redacted] (4 March 1965)
25X1

Distribution:
1 - D/NRO
2 - NRO Comptroller
3 - DD/S&T
4 - AD/OSA
5 - D/TECH/OSA
6 - D/FA/OSA
7 - CD/OSA
8 - PE/OSA
9 - D/TECH/OSA (Chrono)
10 - RB/OSA

[redacted] 25X1
SECRET
25X1
3

Next 1 Page(s) In Document Exempt

Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

25X1

ECP-67-134, NACELLE SWING JOINT PIPING REVISION SR-71. SB R-700 PREVIOUSLY APPROVED.

25X1

[redacted]

ECP-67-112, FUEL CROSSFEED VALVE POSITION INDICATOR SR-71.

cw — fmh

ECP-SR-71-19/3666-139, COMPATIBILITY CHANGE SB APPROVED UNDER SEPARATE LETTER.

25X1

[redacted] file

ECP-22-72-2, RETROFIT OF PRODUCTION ADP INLET CONTROLS IN ALL YF-12A'S THIS IS A PRICE REDUCTION CHANGE. DISPOSITION INSTRUCTIONS FOR EXCESS PARTS AND MATERIAL WILL BE PROVIDED BY THE SPO AT A LATER DATE.

S E C R E T TOR: 011959Z AUG 67

SECRET

DATE

TO :

FROM :

ACTION:

INFO :

IN 91501

CMD
DM
RYB
BB
OSA

ILLEGIB

22-72-2

OSA 1-20

TO INFO CITE

25X1 SECRET 011933Z CITE

25X1 INFO

25X1

25X1 SUBJ: APPROVAL OF ECP'S

25X1 ATTN

25X1 FM

THE FOLLOWING ECP'S ARE TECHNICALLY APPROVED:

25X1

ECP-67-129, EMERGENCY FACEPLATE HEAT PROVISIONS FOR STABILIZED SEAT - SB R-591M IS DISAPPROVED AS WRITTEN IN FAVOR OF COMBINING THESE PROVISIONS WITH BATTERY INSTALLATION IN A SINGLE SERVICE BULLETIN.

25X1

ECP-67-108, EMERGENCY BATTERY POWER MOD SR-71.

25X1

ECP-67-104, FILM TRANSPORTS MOD FOR SR-71 SIMULATOR - COST OF INSTALLATION AND CHECKOUT WILL BE A CHARGE AGAINST LW-3602 CONTRACT.

SECRET

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-56-2
DATE 16 JUNE 1967	AFFECTS: ☐	PROJECT ☒
NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

NRO 25X1

TITLE OF PROPOSAL: MEASUREMENT OF ROLL, PITCH AND YAW

NATURE OF PROPOSAL: This ECP will provide a method of accurately determining airplane roll, pitch and yaw. A 70mm camera will be fixed to the structure of the airplane and will be run at the same time as the Type I or Type II system.

This ECP includes the design and manufacture of one comparator system, development of the computer program required to analyze comparator data and one (1) data run with Type I or Type II System.

REASON FOR PROPOSAL: This ECP provides a method for checking the performance and quality of the airplane camera systems. For a more comprehensive description of this program, please refer to the letter [redacted] to John Parangosky, dated 3 September 1964 on the subject of A-12 optical provisions.

STAT

Budgetary ECP approval TWX [redacted]

STAT

Reason for Revision: To reduce the ECP scope to the design and development of the computer program and analyze the initial data run in lieu of 5 data runs and to revise the proposed Target Price accordingly.

ES	ESTIMATED COST AND TIME INVOLVED:	N/A
	ADDITIONAL FUNDING REQUIRED:	
CP	ESTIMATED COST FOR KITS OR PARTS:	(See Page 2.)
	ADDITIONAL FUNDING REQUIRED:	

ITEMS AFFECTED BY PROPOSAL:

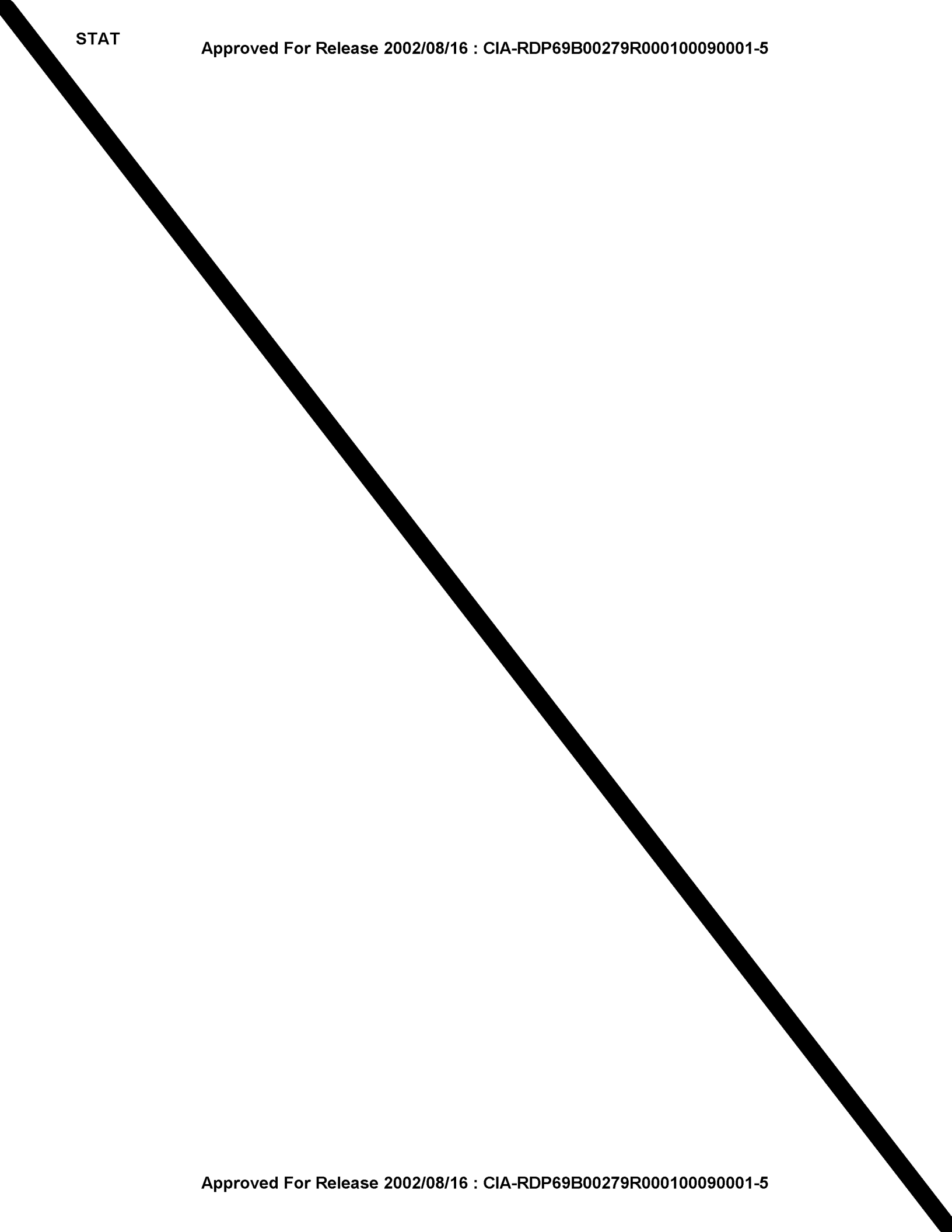
SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT: N/A	AVAILABILITY _____ WEEKS AFTER APPROVAL
DISPOSITION OF SPARES AFFECTED: N/A	
INITIATED BY: [redacted]	APPROVED: [redacted] PROJECT [redacted]

STAT NRO 25X1

1337



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-49-2 NRO
DATE 16 JUNE 1967	AFFECTS : ☐	PROJECT ☒ 25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
FUEL TANKS		

TITLE OF PROPOSAL : FUEL MANAGEMENT REVISION

NATURE OF PROPOSAL : This ECP covers the engineering design and fabrication of kits required to change the fuel tank sequencing of tanks #3 and #4 in A-12 aircraft 121, 122, 125-132, 134 and 135. Also included are kits necessary to accomplish the transfer of fuel from tank #2 to tank #6 and stop the transfer when 6,000 pounds of fuel remain in tank #2 in aircraft 121, 122 and 125-132.

Partial kits will be provided for the transfer of fuel from tank #2 to tank #6 for aircraft 134 and 135. Included in the kits will be:

Part Number	Noun	Qty.
7-860-1	Shutoff Valve	2
6-160-1	Pressure Refueling Valve	2
7-160-1	Pilot Valve	2

REASON FOR PROPOSAL : This ECP will result in tank #4 being the last tank in the fuel sequencing. As a result, the C.G. of the article will be moved further aft for a greater portion of the cruise condition. Moving the C.G. aft reduces trim drag, and results in greater range.

Reason for Revision: To reflect that partial retrofit kits for the transfer of fuel tank #2 to tank #6 in aircraft 134 and 135 will be provided and to reduce the proposed Target Price accordingly. The valves procured for these aircraft will be shipped to the NRO for use as field spares.

25X1

This ECP was approved by Headquarters Message 2341, dated 10 February 1965.

ES	ESTIMATED COST AND TIME INVOLVED :	N/A
	ADDITIONAL FUNDING REQUIRED :	
CP	ESTIMATED COST FOR KITS OR PARTS :	(See Page 2.)
	ADDITIONAL FUNDING REQUIRED :	

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT: ADP will furnish under Service Bulletins 649,818,819,871, 878 and 904.	AVAILABILITY _____ WEEKS AFTER APPROVAL

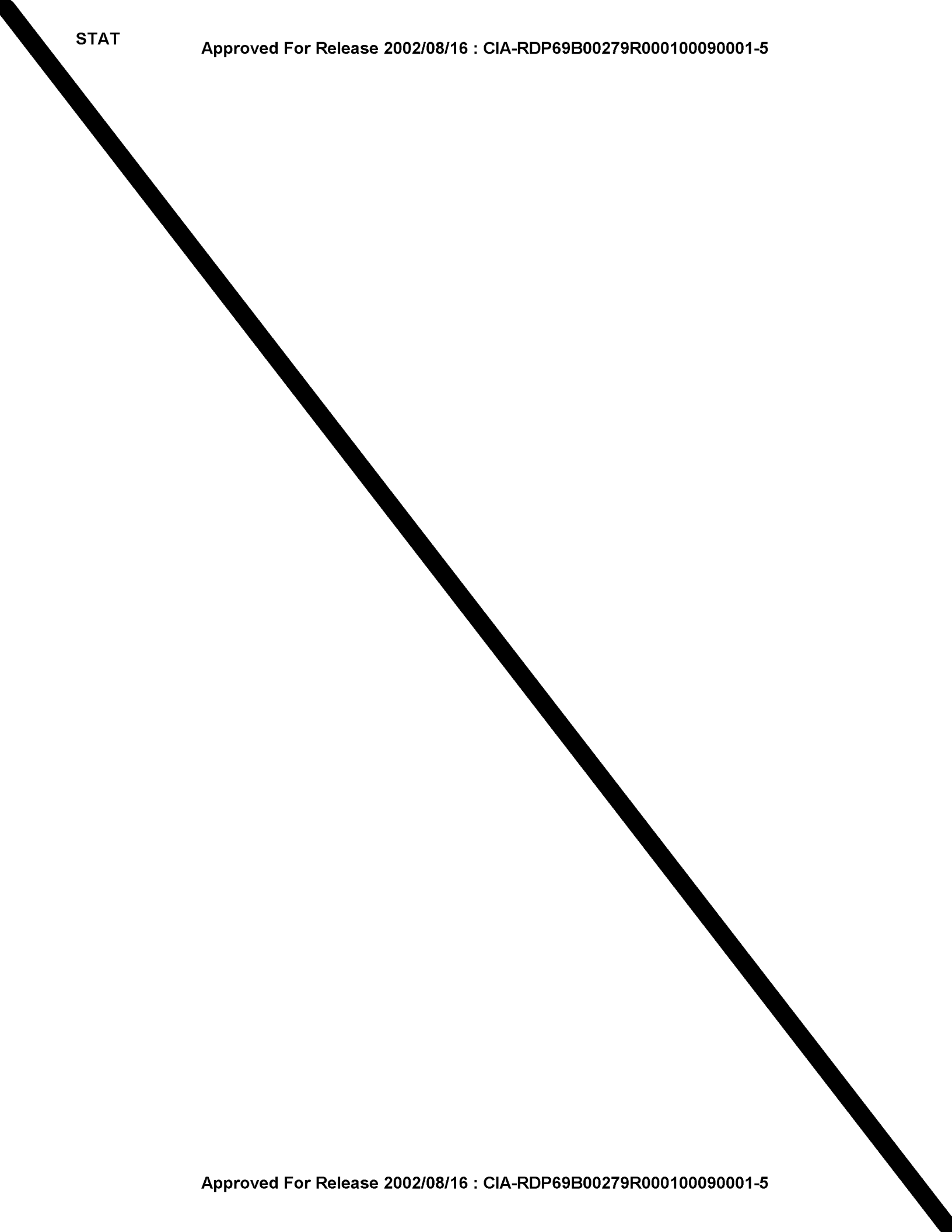
DISPOSITION OF SPARES AFFECTED

NOTED ON SERVICE BULLETINS

STAT

INITIATED BY :	APPROVED :
ADP	

1-237



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL [X]	LAC 22-30-1
DATE 14 JANUARY 1966	AFFECTS: ☐ [X]	PROJECT [X]

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL : COMPRESSOR INLET PRESSURE INDICATING SYSTEM

NATURE OF PROPOSAL: This system would enable the pilot to see the total inlet pressure in each compressor and the required total pressure on a triple indicator. (See attached pages 2 - 3 for technical description).

This ECP covers the following activities:

1. Design and development of the Pressure Indicating System.
2. Engineering design required to incorporate the System in A-12 and YF-12A Aircraft.
3. Fabrication of retrofit kits for all A-12, Articles except S/N 124, and all YF-12A aircraft.

The affect of this system on the R-12 program will be covered on a separate HT-3664 ECP.

(Continued on Page 2.)

REASON FOR PROPOSAL :

1. Inlet pressure recovery can be directly checked during climb and cruise.
2. Will permit pilot to determine if inlet controls are functioning in a manner that will allow completion of mission range.
3. This is only indication of inlet pressure recovery.
4. Present pressure recovery instrument now in use is simply made from a converted dual reciprocating engine manifold gauge. It has been planned to replace this with a true pressure recovery indicating system when sufficient flight test data was available to make this possible.
5. Pilot can read small aircraft yaw angles from differences in right and left inlets.

(Continued on Page 3.)

ES	ESTIMATED COST AND TIME INVOLVED :	N/A
	ADDITIONAL FUNDING REQUIRED :	
CP	ESTIMATED COST FOR KITS OR PARTS :	(See Page 4.)
	ADDITIONAL FUNDING REQUIRED :	

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
ADP will furnish under Service Bulletins A-662 and AF-345.	

DISPOSITION OF SPARES AFFECTED

PARTS WILL BE RETURNED TO DEPOT FOR DISPOSITION.

INITIATED BY :	APPROVED :
ADP	PROJECT

NATURE OF PROPOSAL (Continued)--

The proposed system calculates and provides a visual display of the pressure defined by the expression, $P = \frac{Ve^2}{400} P_{400}$. Visual displays of actual left and right static pressures are provided in such a manner as to permit comparison with the calculated pressure.

The pressure display is obtained through the use of a triple pointer indicator. A separate electronics package houses the associated amplifiers and bridge circuits. Potentiometer type pressure transducers are employed to convert the left and right static pressures into an electrical signal. Intelligence for use in the pressure calculation is obtained by means of characterized potentiometers located in and driven by the Air Data Computer.

One of the potentiometers located in the ADC is characterized to produce an output which is proportional to $\frac{Ve^2}{400}$. The second potentiometer is characterized to produce an output which is proportional to $\frac{1}{P_{400}}$. These potentiometers, in conjunction with two (2) fixed resistors and two (2) trim potentiometers, constitute one half ($\frac{1}{2}$) of a Wheatstone bridge. Trim pots and resistors in the electronics package and a rebalance potentiometer in the indicator, make up the second half of the bridge. Bridge unbalance is amplified and a servo motor drives the indicator potentiometer wiper to the position required to restore balance.

Indicator - The proposed triple pointer indicator contains three (3) motors, three (3) gear trains, and three (3) rebalance potentiometers within a single square case. The indicator places the calculated pressure in the form of a bug type pointer which provides visual representation of an allowable pressure band width.

Control Unit - This unit contains the three (3) bridge circuits and the three (3) amplifiers required for the system.

Internally, this device consists of five (5) rectangular circuit boards which are supported from the backplate by means of standoffs. Six (6) potentiometers are located under a cover on the backplate and are used for field adjustment of the system. Two (2) multipin connectors are employed for making electrical connections.

The circuit used to calculate pressure is essentially a Wheatstone bridge. Half of the bridge is located in the control unit and the other half is in the ADC.

Pressure Transducer - The proposed pressure transducers are of the bellows/potentiometer type. Provisions can be made to attach these units to the control unit or they may be situated at some other convenient point. These devices will be in a location which will minimize the required pressure line run.

REASON FOR PROPOSAL (Continued) --

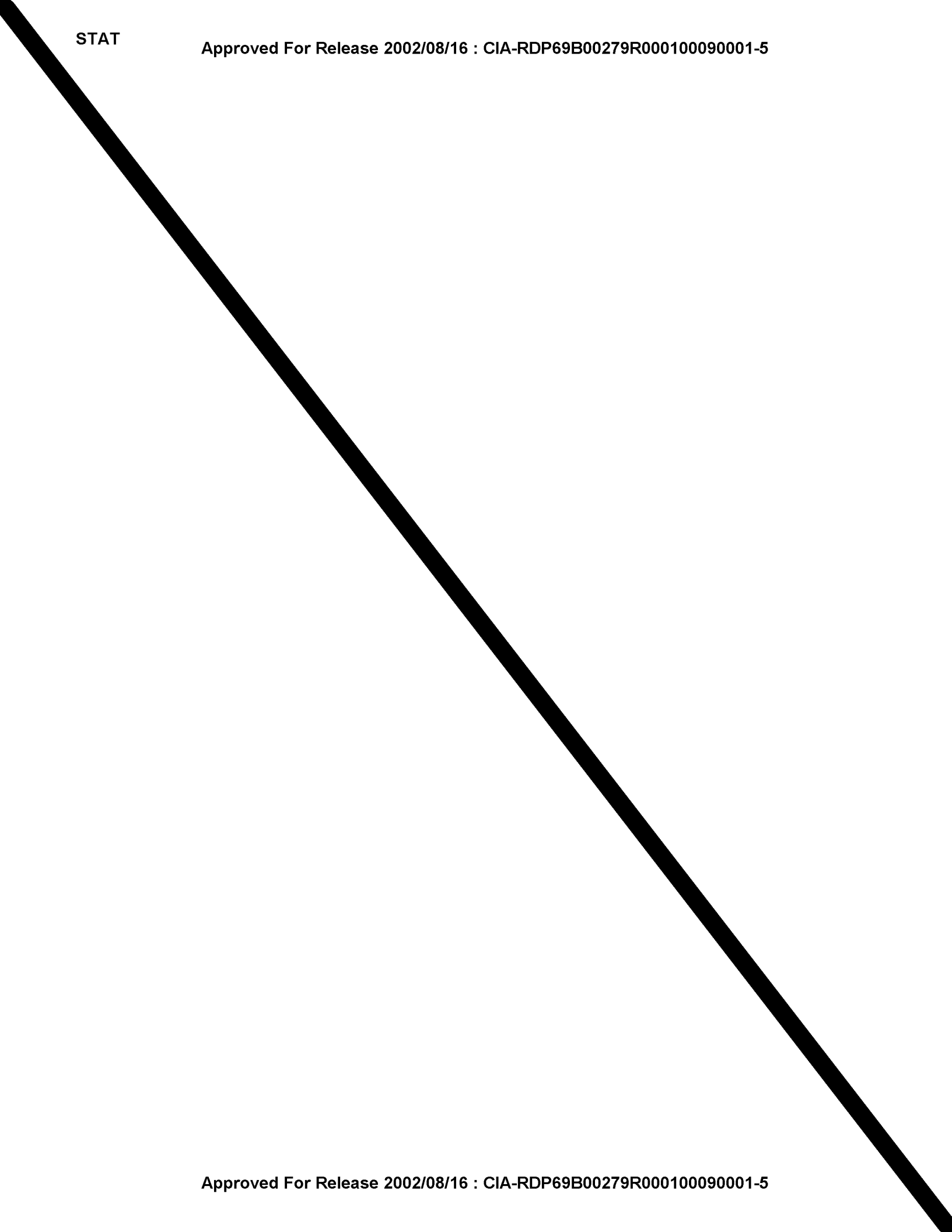
6. When used with the Lockheed inlet control, this indicator will be used also to peak up the inlet performance when using the manual mode. This indicator is most essential when on manual mode in order to obtain maximum engine performance without inlet blowout.

7. This indicator, of course, tell when the inlet is started.

Reason for Revision:

To submit Proposed Target Price. This price reflects a reduction in the engineering and manufacturing effort, the material costs and the deletion of ship 124.

This ECP was approved by Headquarters Message 2341, dated 10 February 1965.



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED - CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-30
DATE 14 October 1964	AFFECTS: ☐ ☒	PROJECT ☒

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL : COMPRESSOR INLET PRESSURE INDICATING SYSTEM

NATURE OF PROPOSAL:
This system would enable the pilot to see the total inlet pressure in each compressor and the required total pressure on a triple indicator. (See attached pages 2 - 3 for technical description.)

Approved by [redacted] STAT
24-65 filed in 22-9-2

This ECP covers the following activities:
1. Design and development of the Pressure Indicating System.
2. Engineering design required to incorporate the System in all A-12 and AF-12 Aircraft.
3. Fabrication of retrofit kits for all A-12 and AF-12 Aircraft.
4. Installation on all A-12 and AF-12 Aircraft.

The affect of this system on the R-12 program will be covered on a separate HT-3664 ECP.

(Continued on Page 2)

REASON FOR PROPOSAL :
1. Inlet pressure recovery can be directly checked during climb and cruise.
2. Will permit pilot to determine if inlet controls are functioning in a manner that will allow completion of mission range.
3. This is only indication of inlet pressure recovery.
4. Present pressure recovery instrument now in use is simply made from a converted dual reciprocating engine manifold gauge. It has been planned to replace this with a true pressure recovery indicating system when sufficient flight test data was available to make this possible.
5. Pilot can read small aircraft yaw angles from differences in right and left inlets.

(Continued on Page 3)

ES	ESTIMATED COST AND TIME INVOLVED :	STAT
	ADDITIONAL FUNDING REQUIRED :	
CP	ESTIMATED COST FOR KITS OR PARTS :	ECP Budgetary Target Price
	ADDITIONAL FUNDING REQUIRED : See Page 4.	Est. of Rel. Program Costs
		Total Program Cost

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
SERVICE BULLETIN TO BE WRITTEN	

DISPOSITION OF SPARES AFFECTED
PARTS WILL BE RETURNED TO DEPOT FOR DISPOSITION

INITIATED BY :	APPROVED :		
LAC			

NRO 25X1

NATURE OF PROPOSAL (Continued)--

The proposed system calculates and provides a visual display of the pressure defined by the expression, $P = \frac{Ve^2}{400} P_{400}$. Visual displays of actual left and right static pressures are provided in such a manner as to permit comparison with the calculated pressure.

The pressure display is obtained through the use of a triple pointer indicator. A separate electronics package houses the associated amplifiers and bridge circuits. Potentiometer type pressure transducers are employed to convert the left and right static pressures into an electrical signal. Intelligence for use in the pressure calculation is obtained by means of characterized potentiometers located in and driven by the Air Data Computer.

One of the potentiometers located in the ADC is characterized to produce an output which is proportional to $\frac{Ve^2}{400}$. The second potentiometer is characterized to produce an output which is proportional to $\frac{1}{P_{400}}$. These potentiometers, in conjunction with two (2) fixed resistors and two (2) trim potentiometers, constitute one half ($\frac{1}{2}$) of a Wheatstone bridge. Trim pots and resistors in the electronics package and a re-balance potentiometer in the indicator, make up the second half of the bridge. Bridge unbalance is amplified and a servo motor drives the indicator potentiometer wiper to the position required to restore balance.

Indicator - The proposed triple pointer indicator contains three (3) motors, three (3) gear trains, and three (3) rebalance potentiometers within a single square case. The indicator places the calculated pressure in the form of a bug type pointer which provides visual representation of an allowable pressure band width.

Control Unit - This unit contains the three (3) bridge circuits and the three (3) amplifiers required for the system.

Internally, this device consists of five (5) rectangular circuit boards which are supported from the backplate by means of standoffs. Six (6) potentiometers are located under a cover on the backplate and are used for field adjustment of the system. Two (2) multipin connectors are employed for making electrical connections.

The circuit used to calculate pressure is essentially a Wheatstone bridge. Half of the bridge is located in the control unit and the other half is in the ADC.

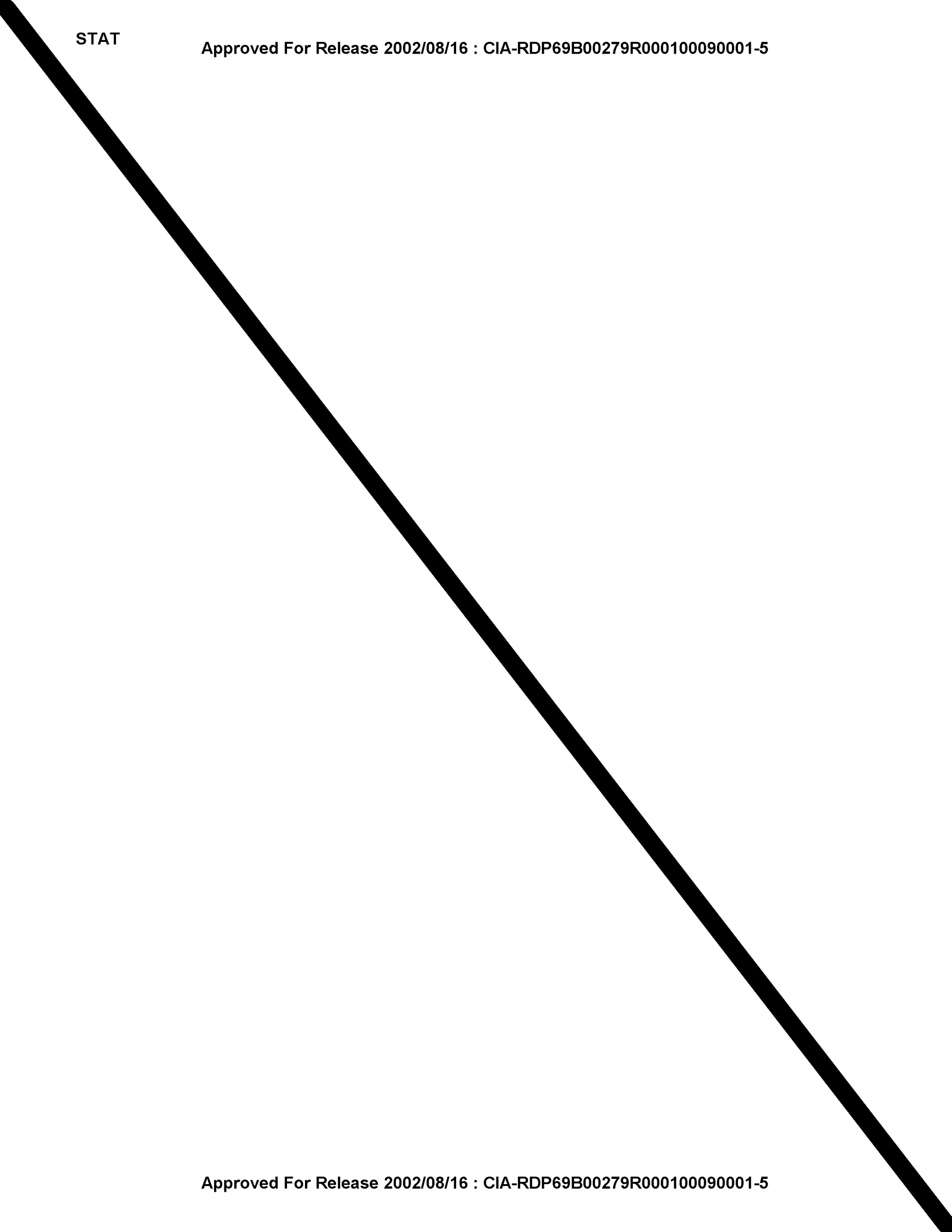
Pressure Transducer - The proposed pressure transducers are of the bellows/potentiometer type. Provisions can be made to attach these units to the control unit or they may be situated at some other convenient point. These devices will be in a location which will minimize the required pressure line run.

REASON FOR PROPOSAL (Continued) --

6. When used with the Lockheed inlet control, this indicator will be used also to peak up the inlet performance when using the manual mode. This indicator is most essential when on manual mode in order to obtain maximum engine performance without inlet blowout.

7. This indicator, of course, tells when the inlet is started or unstarted.

This ECP was Item #2 on our 30 April 1964 ECP listing. We are proceeding based upon approval given in Hq's TWX 6882, dated 12 May 1964.



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-29-1
DATE 14 JANUARY 1966	AFFECTS: ☐	PROJECT ☒

NRO
NRO
25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
VOICE RECORDER		

TITLE OF PROPOSAL: PILOT VOICE RECORDER

NATURE OF PROPOSAL:

This ECP provides a destructible pilot voice recorder in all A-12 Aircraft (13 Ships). The program includes the selection of the recorder, development of a destruct system, modifications to the recorder to increase recording time to the level consistent with minimum playback intelligibility of sound, and production of kits required to incorporate the recorder system on all A-12 aircraft.

REASON FOR PROPOSAL: This program satisfies Headquarters requirement for a destructible scratch pad for pilots. The recorder selected as best applicable for this requirement is a Dictet which is modified to slow down the speed and add a series of Exothermus Tape for destruct capability. This recorder is outfitted with ½ mill tape and provides approximately one hour plus of recording time. The recorder is energized by an on-off switch and started by means of the pilot microphone button. The recording time provided should be sufficient for all operational missions presently planned. The destruct system is triggered by pilot ejection.

This ECP was approved per Headquarters Message 3690, dated 5 March 1965.

Reason for Revision: To submit Proposed Target Price. This price reflects increased developmental costs.

ES	ESTIMATED COST AND TIME INVOLVED:	
	ADDITIONAL FUNDING REQUIRED:	N/A
CP	ESTIMATED COST FOR KITS OR PARTS:	
	ADDITIONAL FUNDING REQUIRED:	(See Page 2.)

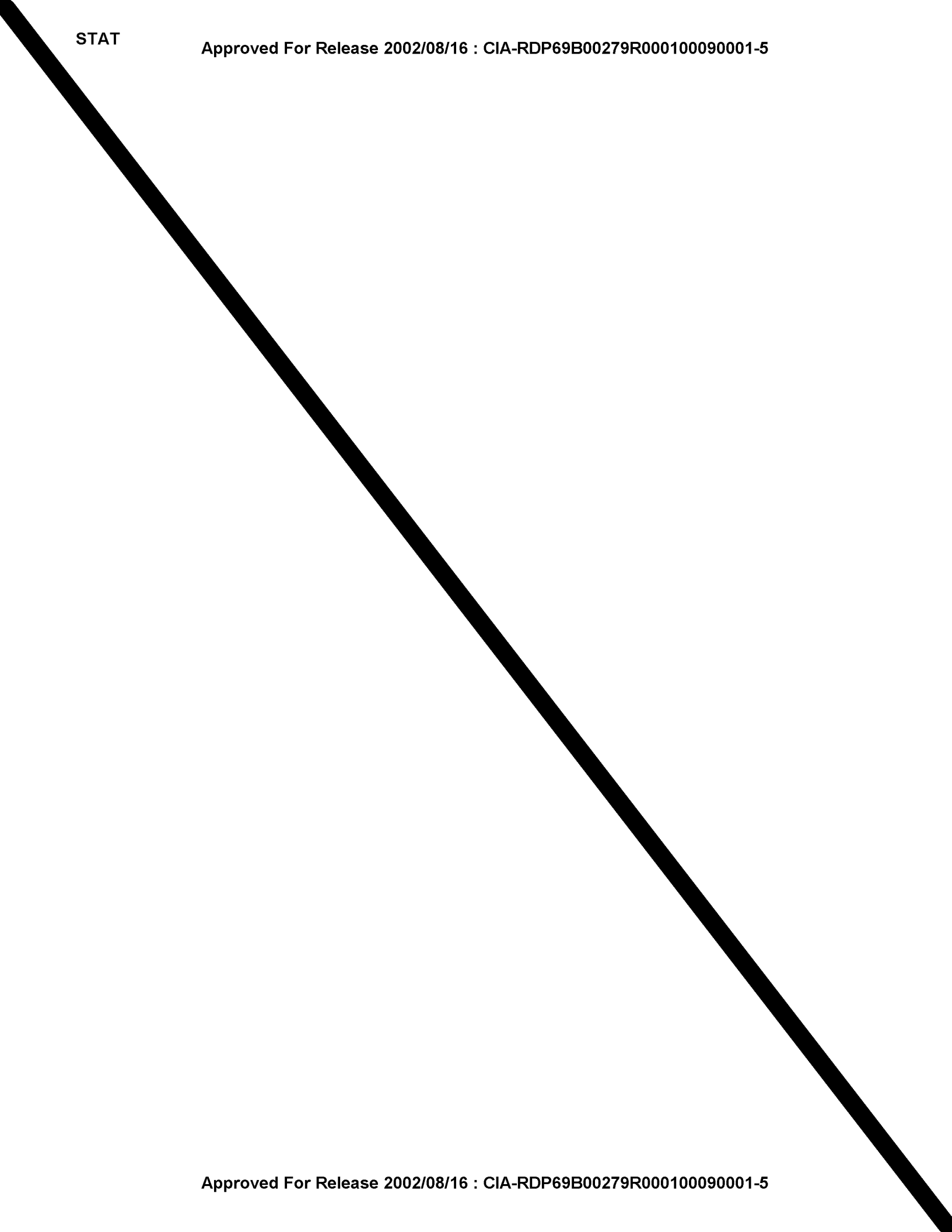
ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT ADP will furnish under Service Bulletin 911.	AVAILABILITY _____ WEEKS AFTER APPROVAL
DISPOSITION OF SPARES AFFECTED N/A	amend 9 CT-22
INITIATED BY: PROJECT HEADQUARTERS	APPROVED:

NR
025X1



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

25X1 [redacted]

SECRET

25X1 [redacted]

25X1 [redacted]

25X1

Copy 3

5 February 1965

MEMORANDUM FOR THE RECORD

SUBJECT: Routine Meeting with the [redacted] D/NRO

NRO 25X1

NRO 25X1 1. At 1600 hours on the 4th of February, I, as Director of Program B, [redacted] NRO, met with Dr. McMillan, as the D/NRO, on a routine review of current status of NRO programs.

2. The primary purpose from my viewpoint of the meeting was to explain the status of the ECP's of the OXCART vehicle; to report on the progress of a two-year program plan for the OXCART; and to advise him of the forthcoming request for authority to transfer funds from a surplus in the OXCART airframe account to a shortage in the J-58 engine account during the current fiscal year.

3. After a review of the current pending ECP's, the D/NRO indicated complete satisfaction with my explanation of our proposed ECP's and that routine approval would be forthcoming shortly. In addition, he felt that I had sufficient control over the ECP program and that he would raise the requirement for D/NRO approval on ECP's

NRO 25X1 from [redacted] He also indicated that I would receive authority to transfer surpluses from the airframe account to the engine account as required.

25X1 [redacted]

GROUP 1
Excluded from automatic downgrading and declassification

25X1 [redacted]

SECRET

SECRET

25X1

25X1

25X1

25X1

(Signed) Jack C. Ledford

JACK C. LEDFORD
Colonel USAF
Assistant Director
(Special Activities)

25X1 AD/OSA/JCLedford:

Distribution:
#1 - AD/OSA
#2 - DD/S&T
#3 - DAD/OSA
#4 - C/PS/OSA
#5 - D/TECH/OSA
#6 - D/FA/OSA
#7 - Chrono
#8 - RB/OSA

25X1

25X1

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE UNDER SECRETARY

6 FEB 1965

25X1 NRO

MEMORANDUM FOR Director, [redacted] NRO Program B

SUBJECT: Approval of Engineering Changes to OXCART

Reference is made to your memorandum of 3 February, subject as above.

ECP's 22-30, 22-35, 22-36, 22-43, 22-49, and 22-58 are approved as submitted.

25X1 NRO

My 24 November letter which delegated you authority to approve ECP's under [redacted] is hereby revised to reflect ECP's under [redacted]

Please keep me apprised, on a monthly basis, on new ECP's approved by you and also progress on major ECP's previously approved and in work. 25X1

[redacted]

Brockway McMillan
Director
[redacted] National Reconnaissance Office

NRO
25X1

Copy 2-DDCI

Series B:
1-DD/S&T
2-D/TECH/OSA
3-PS/OSA
OXCART
4-CD/OSA

25X1

4 of 16 Series B
Page 1 of 1

Control No. [redacted]

[redacted]

SECRET

25X1

CENTRAL INTELLIGENCE AGENCY
WASHINGTON 25, D.C.

25X1 [redacted] [redacted] 25X1

Copy 7

3 February 1965

NRO 25X1

MEMORANDUM FOR: Director, [redacted] National Reconnaissance Office

SUBJECT: Approval of Engineering Changes to OXCART

25X1 NRO 1. Forwarded herewith are copies of six ECP's, each of which is over [redacted] and therefore requires your approval in accordance with your letter of 24 November 1964. In addition I have attached a list of ECP's under [redacted] that I have approved since receipt of your letter. In both cases, a short justification explaining the reason for the ECP is included. More detailed explanation may be found on the attached ECP's. NRO 25X1

25X1 NRO 2. It is recommended that you approve the six above [redacted] and notify me so that the contractor may be advised.

3. The ECP's included in this document, plus those which have been approved prior to your memorandum of 24 November 1964, will provide for the so-called major modification program which we have been studying recently, with the exception of the following:

a. The addition of extra fuel tanks which we are recommending against.

b. The stiffening of the rudder post arms and the modification of the air data computer to obtain [redacted] climb capability, and, 25X1

[redacted] 25X1

GROUP 1
Excluded from automatic downgrading and declassification

[redacted] 25X1

SECRET

SECRET

25X1

25X1

25X1

25X1

4. At this time it appears that the modifications enumerated in paragraph 3 above can be accomplished as service bulletins.

5. Although it appears that some savings could be obtained by accomplishing some of these ECP's and service bulletins in one modification program at Palmdale, I do not think the amount of savings would justify the security risk and the longer-down time of the aircraft which would result in going to Palmdale. I will have a program plan for the A-12 for the remainder of FY 65 and 66 within the next week which will demonstrate that we can accomplish our objectives with the above ECP program and still be able to re-program money from the airframe line item to the J-58 engine line item to accomplish objectives in the engine program.

25X1

JACK C. LEDFORD
Colonel USAF
Director, Program B, NRO

NRO
25X1

NRO

25X1

Attachments:
I ECP's under (List)
II ECP's over (List)
III Six ECP's

25X1

25X1

SECRET

25X1

25X1 [redacted] [redacted] 25X1

25X1 AD/OSA/JCLedford [redacted] (2 Feb 65)

Distribution:

#1 - D/NRO w/atts
#2 - NRO Comptroller, w/atts I & II
#3 - DD/S&T, w/atts I & II
#4 - AD/OSA, W/atts I & II
#5 - D/TECH/OSA, w/ atts I & II
#6 - D/FA/OSA, w/atts I & II
#7 - CD/OSA, w/atts I & II
#8 - PS/OSA, w/atts I & II
#9 - D/TECH/OSA (Chrono) w/atts I & II
#10 - RB/OSA, w/ atts I & II

[redacted] 25X1

25X1 [redacted]

ENGINEERING STUDIES AND CHANGE PROPOSALS

25X1

ENGINEERING STUDIES

ES No.	Title	Budgetary Estimate
21-2	New Antenna for ARC-50 DF Capability	

25X1

ENGINEERING CHANGE PROPOSALS - BUDGETARY ITEMS

ECP No.	Title	Contract CT-22 Budgetary Estimate	Estimated Related Program Costs (Other Contracts)	Estimated Total Program Costs
22-29	Pilot Voice Recorder			
22-56	Measurement of Roll, Pitch and Yaw			

25X1

ENGINEERING CHANGE PROPOSALS - TARGET/CEILING ITEMS

25X1

ECP No.	Title	Contract CT-22 Ceiling Price	Estimated Related Program Costs (Other Contracts)	Estimated Total Program Costs
22-41	Stall Warning System			
22-51	Modifications to ADP Prototype Inlet Control System			
22-54	Modifications to 121, 122, 131 for Type I Camera			

25X1

2-2-65

Covered by 4-March 65

25X1

OSA - 0678-65

2 February 1965

To: Contracting Officer, Contracts CT-22 and FT-21

Subject: TRANSMITTAL OF ENGINEERING STUDIES AND CHANGE PROPOSALS

NRO
25X1

Transmitted herewith for your consideration and approval are the attached Engineering Studies and Change Proposals.

[redacted]

cc: [redacted]

25X1

25X1

[redacted]

SECRET

Attachment I to: [redacted] 25X1

25X1

NRO

25X1

LIST OF ECP'S UNDER [redacted]

22-7-2 Deletes replacement of two ARC-50 ground stations. This ECP was previously approved for a total of [redacted] in March 1964 and amendment No. 1 is merely to gain formal approval of the deletion.

25X1

22-9-2 This amendment to a previously approved ECP is to increase the scope of lightning tests by conducting some on the nose of the aircraft in addition to the rudder. Ceiling price - [redacted]

25X1

22-11-1 Oxygen system balance valve. This amendment is to revise the system so as not to lose oxygen from a system that has failed by removing the failed system from usage. ECP 22-11 had been previously approved. Ceiling price - [redacted]

25X1

22-12-1 A-12 parachute improvement program. ECP 22-12 had been previously approved. This amendment is concerned with developing a method to provide additional altitude for better seat/plane separation. The new ceiling price is [redacted] and the work is completed.

25X1

22-13-1 Periscope improvement. This was previously approved and the amendment adds the installation of a new reticle to provide the pilot with the ability to set his course by using the sun compass. Total cost - [redacted]

25X1

22-24 Drag chute deploy handle to replace 3-way toggle switch. This was requested by the pilots for more efficiency. Total cost - [redacted]

25X1

22-27-1 Map case destruct system. Previously approved and this amendment is to establish firm ceiling price of [redacted]

25X1

[redacted] 25X1

SECRET

25X1

22-62 Seat and parachute rework to accept more powerful catapult developed under ECP 22-12-1. This was for Kedlock vehicles and was approved by [redacted] dated 28 December 1964. Estimate of related costs [redacted] 25X1

25X1

22-66 Alternate steering system in case of loss of left hand, engine driven hydraulic pumps for Kedlock vehicles. [redacted] dated 28 December 1964 approved this ECP for [redacted] 25X1 25X1

25X1 [redacted] SECRET Attachment II to: [redacted] 25X1 25X1

NRO 25X1

LIST OF ECP'S OVER [redacted]

22-30 Compressor inlet pressure indicator to enable the pilot to see the compressor inlet pressure in each engine to determine if controls are functioning in a manner that will allow completion of mission range. This is a necessary change and had been approved for all Kedlock vehicles. Total program cost - [redacted] 25X1

22-35 All Attitude Fuel Readout System. At the present time the fuel guage reads accurately only at an aircraft angle of attack of 7 1/2 degrees. Estimated total program costs - [redacted] 25X1

22-36 Design and develop four carts to aid in complete checkout of control system. This has been done previously by using whatever contractor equipment available but is needed to expedite operational checkouts on pre- and post-flights. The ECP also includes equipment for the Kedlock program. This ECP had been previously approved and this is the formal contractor request. Total estimated cost - [redacted] 25X1

22-43 Replace [redacted] in all OXCART vehicles being retrofitted with Lockheed electronic inlet control under ECP-48, previously approved. Actual go-ahead will be withheld until a final decision is made on inlet control. Total program costs - [redacted] 25X1 25X1

22-49 Design and engineer kits required to change the fuel tank sequencing on all aircraft except #121. This is to reduce trim drag and results in greater range. Total cost - [redacted] 25X1 25X1

22-58 Replace [redacted] oil pressure transmitter with [redacted] 25X1 to correct flight aborts. The present transmitter has been causing too frequent aborts for reliability. Total cost - [redacted] 25X1

25X1

[redacted] SECRET [redacted] 25X1

GP 1 Excluded from automatic downgrading and declassification

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL [X]	LAC 22-22-1
DATE 14 JANUARY 1966	AFFECTS: ☐	PROJECT [X]

NRO 25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL : TACAN

NATURE OF PROPOSAL: This ECP covers the development and manufacture of kits required to incorporate TACAN in A-12 Articles 122,125-132 134 and 135. TACAN will replace the ARC-15F Receiver and B18A Converter. In addition the Glide Slope Marker Receiver installation will be removed from the nose per [redacted] Installation is a difficult task requiring engineering for two (2) sets of Articles (1) 122,125-128 and (2) 129-131. Extensive modification is required in the "E-bay, cockpit and chine areas.

ECP 22-75 will incorporate TACAN in Article 124.

STAT

REASON FOR PROPOSAL :

Reason for Revision: To submit Proposed Target Price. This price reflects the transfer of ship 124 to ECP 22 -75 for later installation, a reduction in the scope of engineering and the deletion of installation costs.

This ECP was approved by Headquarters Message 798, dated 20 July 1964.

covered in amend 9 CT-22

ES	ESTIMATED COST AND TIME INVOLVED :	N/A
	ADDITIONAL FUNDING REQUIRED :	
CP	ESTIMATED COST FOR KITS OR PARTS :	(See Page 2.)
	ADDITIONAL FUNDING REQUIRED :	

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT ADP will furnish under Service Bulletins: 605,733,783,882, 950 and 956.	AVAILABILITY _____ WEEKS AFTER APPROVAL

DISPOSITION OF SPARES AFFECTED

Equipment removed from aircraft will be returned to the Depot.

NRO 25X1

INITIATED BY : PROJECT HEADQUARTERS	APPROVED :

1127

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL [X]	LAC 22-22-1
DATE 14 JANUARY 1966	AFFECTS: ☐	PROJECT [X]

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL : TACAN

NATURE OF PROPOSAL: This ECP covers the development and manufacture of kits required to incorporate TACAN in A-12 Articles 122,125-132 134 and 135. TACAN will replace the ARC-15F Receiver and D18A Converter. In addition the Glide Slope Marker Receiver installation will be removed from the nose per [redacted] Installation is a difficult tack requiring engineering for two (2) sets of Articles (1) 122,125-128 and (2) 129-131. Extensive modification is required in the "E-bay, cockpit and chine areas.

ECP 22-75 will incorporate TACAN in Article 124.

STAT

REASON FOR PROPOSAL :

Reason for Revision: To submit Proposed Target Price. This price reflects the transfer of ship 124 to ECP 22 -75 for later installation, a reduction in the scope of engineering and the deletion of installation costs.

This ECP was approved by Headquarters Message 798, dated 20 July 1964.

covered in amend 9 CT-22

ES	ESTIMATED COST AND TIME INVOLVED :	N/A
	ADDITIONAL FUNDING REQUIRED :	
CP	ESTIMATED COST FOR KITS OR PARTS :	(See Page 2.)
	ADDITIONAL FUNDING REQUIRED :	

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY
ADP will furnish under Service Bulletins: 605,733,783,882, 950 and 956.	_____ WEEKS AFTER APPROVAL

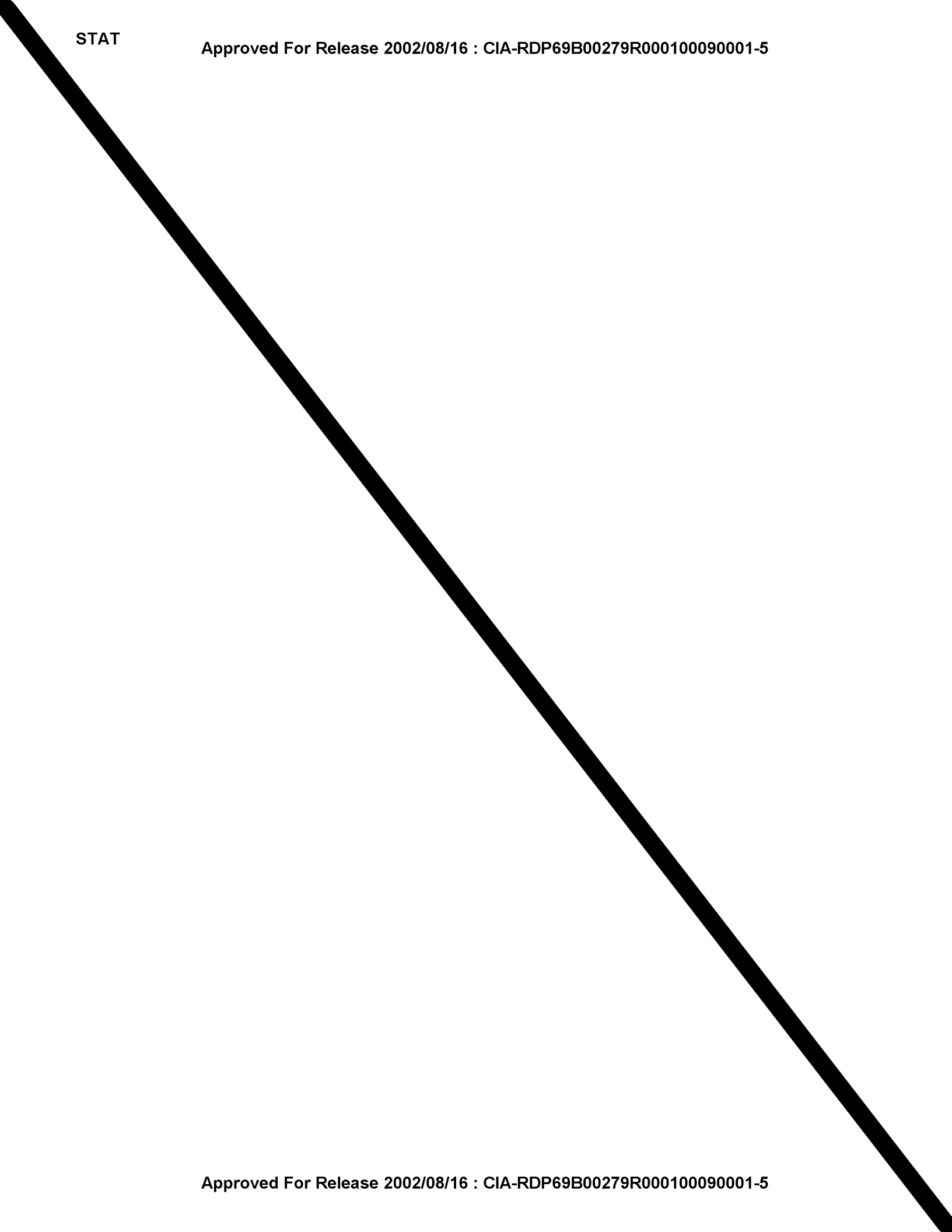
DISPOSITION OF SPARES AFFECTED

Equipment removed from aircraft will be returned to the Depot.

INITIATED BY :	APPROVED :	
PROJECT HEADQUARTERS		

NRO 25X1

NRO 25X1



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Return to C D/OSA

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-22
DATE 26 May 1964	AFFECTS : [redacted] ☐	PROJECT ☒

NRO 25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
AIRCRAFT		

TITLE OF PROPOSAL : TACAN IN ALL A-12's

STAT

NATURE OF PROPOSAL: Install TACAN in all A-12 Articles. TACAN (ARN-52V) replaces VOR (ARC-15F receiver and BI8A converter). In addition, the Glide Slope Marker Receiver installation will be removed from the nose per request [redacted] Installation is difficult job requiring different engineering for four sets of articles (a) 121, 122, 125-128, 132,133 (b) 129-131 (c) 124 (d) 134,135. Preliminary evaluation indicates job can be accomplished. Major modification required in "E" - bay and cockpit as well as changes in other areas including chines. Assumes TACAN and Indicator is GFAE to LAC.

STAT

approved by [redacted] dtd 20 July 64 which is filed on other side of folder w/ ECP-17

STAT

REASON FOR PROPOSAL :

1. [redacted] Requests ECP.

2. To identify job and provide budgetary estimate.

3. We are proceeding with this job based upon authorization provided by [redacted] This is item 1 on "Anticipated ECP" list submitted 30 April 1964.

STAT

per [redacted] 15 June 65 ECP listing

STAT

STAT

ES	ESTIMATED COST AND TIME INVOLVED : ADDITIONAL FUNDING REQUIRED :	
CP	ESTIMATED COST FOR KITS OR PARTS : ADDITIONAL FUNDING REQUIRED :	Budgetary Estimate See Page 2 — Target Ceiling [redacted]

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY ______ WEEKS AFTER APPROVAL
Service Bulletin to be Written	

DISPOSITION OF SPARES AFFECTED

Equipment removed from Aircraft and Spares will be sent to Depot

NRO 25X1

INITIATED BY :	APPROVED :
PROJECT HEADQUARTERS	[redacted] OA GP

1337

Next 6 Page(s) In Document Exempt

Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED - CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-18-1
DATE 29 NOVEMBER 1965	AFFECTS: ☐	PROJECT ☒

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
OXYGEN SYSTEM		

TITLE OF PROPOSAL : RETROFIT OF LOX SYSTEM - A-12 ARTICLES

NATURE OF PROPOSAL:

Provide kits to retrofit S/N 121, 122, 124-131 and 134, 135 to Liquid Oxygen System.

Two-place articles (S/N 124, 134 and 135) will have the same oxygen capacity (20 liters) as single place articles; this is sufficient capacity for [redacted] normal mission and [redacted] missions with failure of one system occurring at mid-point.

See ECP 22-8 for development cost and incorporation of LOX System in S/N 132 and 133.

REASON FOR PROPOSAL :

Headquarters message [redacted] requests ECP.

Reason for Revision: To submit Target/Ceiling Price.

Incorporated by Amend 9 CT-22

ES	ESTIMATED COST AND TIME INVOLVED : ADDITIONAL FUNDING REQUIRED :
CP	ESTIMATED COST FOR KITS OR PARTS : See Page 2. ADDITIONAL FUNDING REQUIRED :

ITEMS AFFECTED BY PROPOSAL :

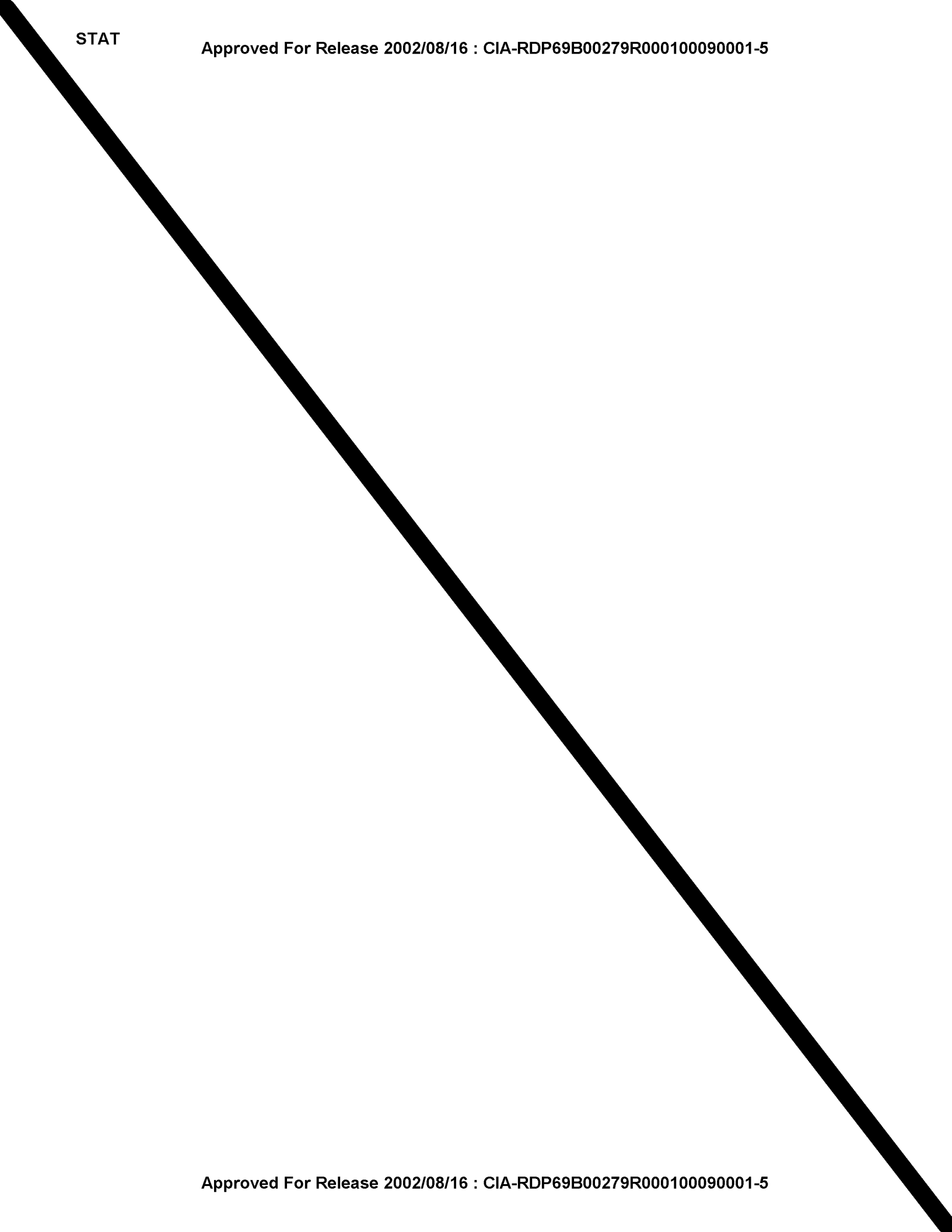
SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
Service Bulletin: 574, 592, 598, 709	

DISPOSITION OF SPARES AFFECTED

INITIATED BY :	APPROVED :	
PROJECT HEADQUARTERS		4F-12/18/65



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-18

NRO 25X1

DATE April 30, 1964	AFFECTS:		☐	PROJECT ☒

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
OXYGEN SYSTEM		

TITLE OF PROPOSAL : RETROFIT OF LOX SYSTEM - A-12 ARTICLES STAT

NATURE OF PROPOSAL :

Provide kits to retrofit S/N 121, 122, 124 - 131 and 134, 135 to Liquid Oxygen System.

Two place articles (S/N 124, 134 and 135) will have the same oxygen capacity (20 liters) as single place articles; this is sufficient capacity for [redacted] normal mission and [redacted] missions with failure of one system occuring at midpoint.

See ECP 22-8 for development cost and incorporation of LOX System on S/N 132 and 133.

REASON FOR PROPOSAL :

Headquarters message [redacted] requests ECP. STAT

STAT

ES — ESTIMATED COST AND TIME INVOLVED : STAT

ADDITIONAL FUNDING REQUIRED :

CP — ESTIMATED COST FOR KITS OR PARTS : Budgetary estimate: Retrofit Kits [redacted]
Installation
Total

ADDITIONAL FUNDING REQUIRED :

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

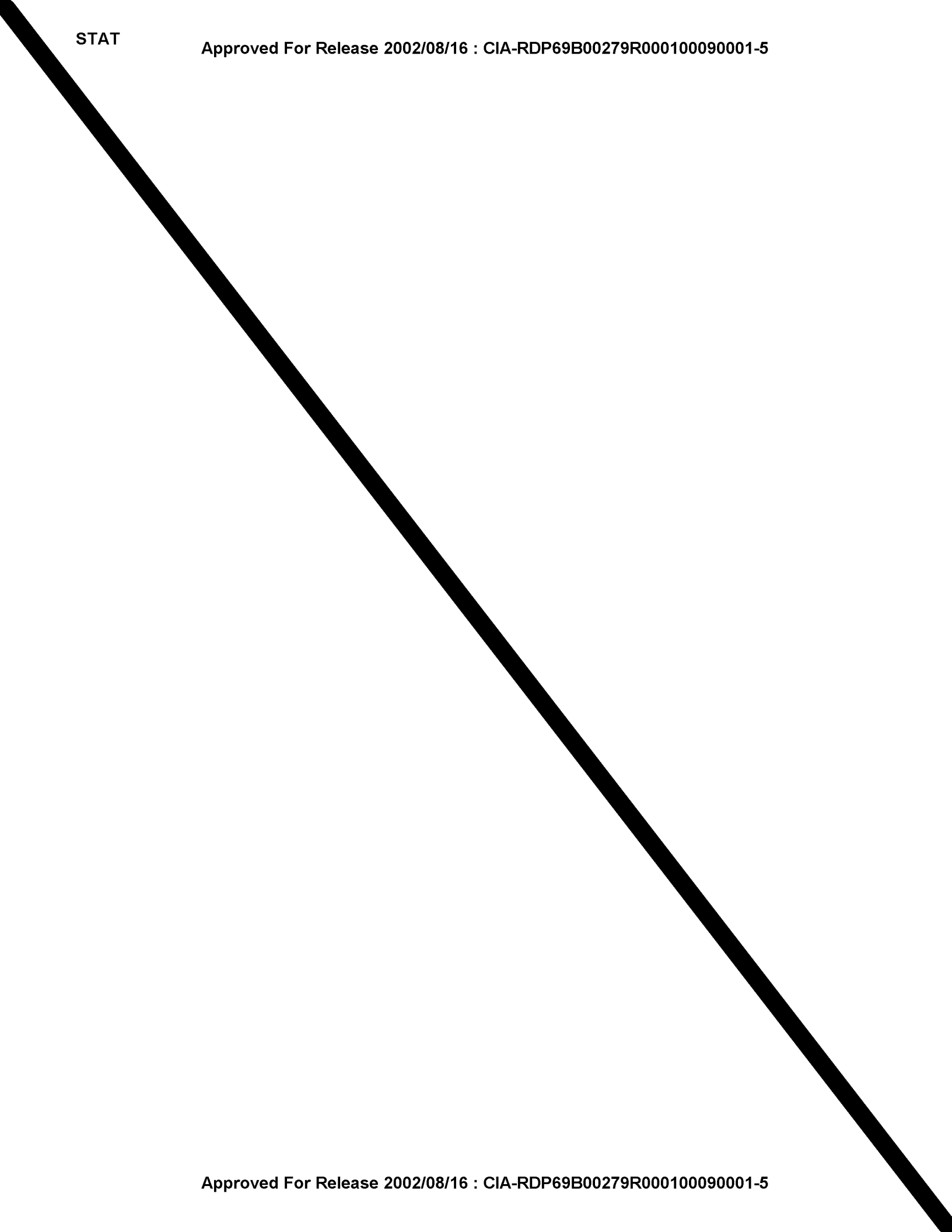
EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
Service Bulletin to be written	

DISPOSITION OF SPARES AFFECTED

25X1 NRO

INITIATED BY :	APPROVED :	
Project Headquarters		



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

Return to C/W/DS

LOCKHEED-CALIFORNIA COMPANY

ENGINEERING STUDY ☐

CHANGE PROPOSAL [X]

LAC 22-17

NRO 25X1

DATE June 3, 1964

AFFECTS: ☐ [X] PROJECT [X]

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
CONTROL STICK		

TITLE OF PROPOSAL: REPLACE CONTROL STICK GRIPS ON A-12 AND AF-12 ARTICLES

NATURE OF PROPOSAL:

Replace presently used B-9 control stick grip assembly with newly developed unit made out of magnesium. B-9 was fully qualified unit with no failures experienced by other users. L.A.C. has had 50% of units fail. We have developed a new source for the magnesium stick grip. New units will also be used on the B-12 program.

REASON FOR PROPOSAL:

1. Replace defective control stick assemblies.
2. We are proceeding with this job on the basis of ☐

STAT

ES ESTIMATED COST AND TIME INVOLVED:

ADDITIONAL FUNDING REQUIRED:

STAT

CP ESTIMATED COST FOR KITS OR PARTS: SEE PAGE 2 Target Price / Ceiling Price ☐

ADDITIONAL FUNDING REQUIRED:

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT: SERVICE BULLETIN 562

AVAILABILITY _____ WEEKS AFTER APPROVAL

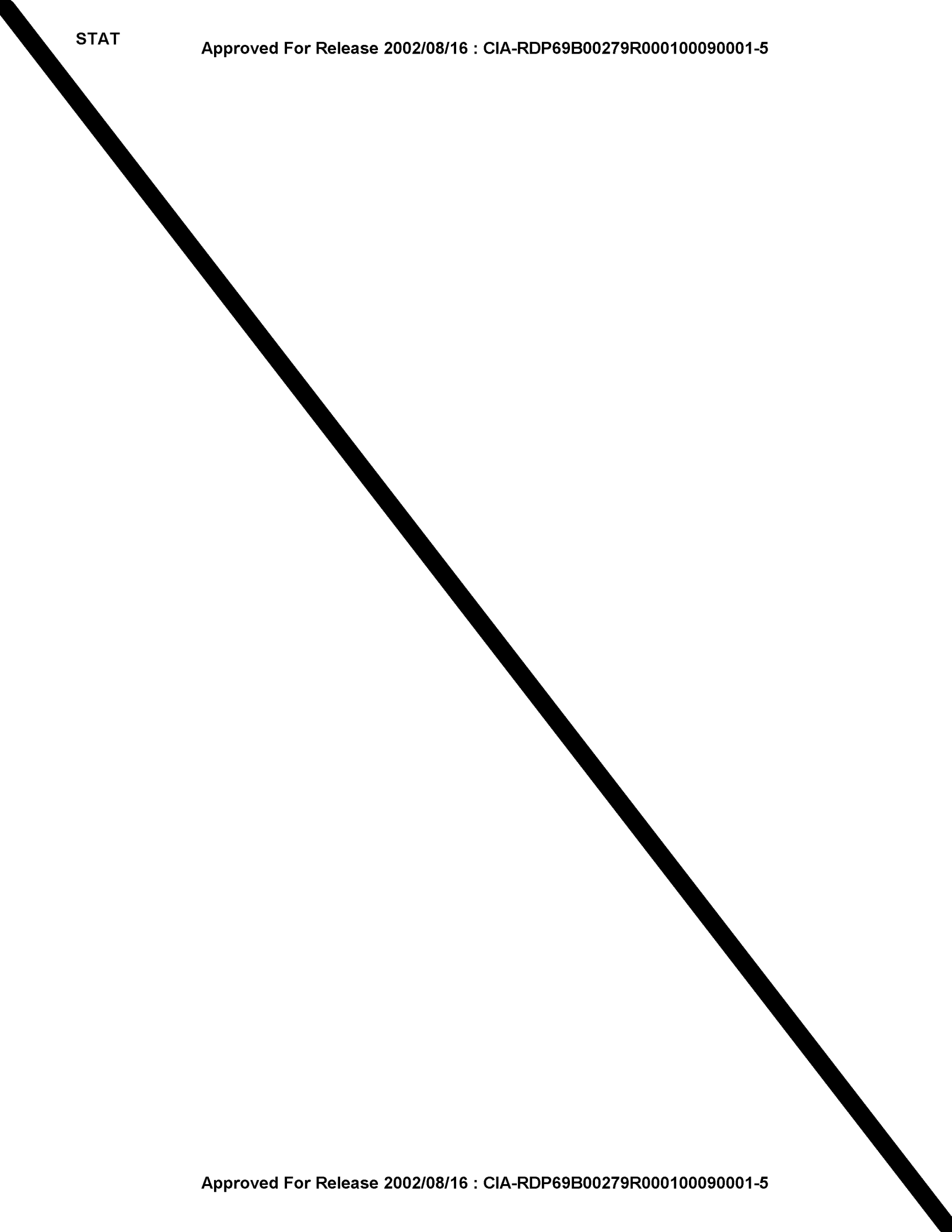
DISPOSITION OF SPARES AFFECTED: SCRAPPED

25X NRO

INITIATED BY: LAC

APPROVED: ☐ OTCP

1337



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED - CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-24

NRO 25X1

DATE 27 October 1964	AFFECTS: ☐	PROJECT ☒

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL: DRAG CHUTE DEPLOY HANDLE

NATURE OF PROPOSAL:

Design effort, fabrication and assembly of kits to modify 13 A-12 articles to accept a drag chute deploy handle.

Installation of handle is not a part of this ECP.

REASON FOR PROPOSAL:

The deploy handle replaces a three-way toggle switch. Pilots requested LAC to provide a push-pull device in lieu of the toggle switch.

Approved by [redacted] 2-9-65 filed in 22-9-2

STAT

ES	ESTIMATED COST AND TIME INVOLVED: ADDITIONAL FUNDING REQUIRED:		
CP	ESTIMATED COST FOR KITS OR PARTS: ADDITIONAL FUNDING REQUIRED: (See Page 2).	Target Price Ceiling Price	STAT

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
SERVICE BULLETIN 590	

DISPOSITION OF SPARES AFFECTED

NOT APPLICABLE

NRO 25X1

INITIATED BY:	APPROVED:		
HEADQUARTERS' PILOTS			

Next 4 Page(s) In Document Exempt

Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

CLASSIFIED MESSAGE

SECRET

ROUTING

1		9	
2		10	
3		11	
4		12	
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6		14	
7		15	
8		16	

PRECEDENCE					
	DEFERRED		PRIORITY		INITIALS
	ROUTINE		OPERATIONAL IMMEDIATE		INITIALS

PAGE 3

INFO CITE

FIREWELL CO.:

A. DEVELOP PARACHUTE SUPPORT BLOCK WITH OPTIMUM WEIGHT CHANGE RESPONSE TO INSURE MINIMUM WEIGHT OF PARACHUTE ON PILOTS SHOULDERS. IF POSSIBLE, SPACE FOR SMALL SURVIVAL ITEMS SHOULD BE PROVIDED. PROTOTYPE AVAILABLE 20 FEB 64.

B. ON BASIS OF INDIVIDUAL PILOTS, CUSTOMIZE SEAT CUSHIONS FOR THE SURVIVAL KIT. REPORT ON PROGRESS ON AT LEAST ONE PILOT BY 1 MARCH 64.

C. DESIGN PAN TO INCORPORATE NEW PARACHUTE RELEASES AND EMERGENCY OXYGEN SUPPLY IN PRESENT PARACHUTE CONFIG. EIGHTY CU. IN. OF OXYGEN TO BE SUPPLIED IN DUAL SYSTEM DESIGN.

D. CONTINUE EFFORTS TO REDUCE SUIT CONTROLLER BACK PRESSURE. REQUEST REPORT ON PROGRESS BY 1 MARCH 64.

DAVID CLARK CO.

A. PROCEED ON A PRIORITY BASIS ON A DESIGN TO

COORDINATING OFFICERS

SECRET

GROUP 1 Excluded from automatic downgrading and declassification

RELEASING OFFICER AUTHENTICATING OFFICER

 Copy No.

UNCLASSIFIED MESSAGE

SECRET

ROUTING

1		9	
2		10	
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7		15	
8		16	

PRECEDENCE				
	DEFERRED		PRIORITY	
	ROUTINE		OPERATIONAL IMMEDIATE	

PAGE 4

INFO CITE

INCORPORATE A LIGHT WEIGHT OXYGEN MASK FOR USE IN THE FPS HELMET WHICH WILL ALLOW THE PILOT TO FLY WITH FACE VISOR IN THE UP POSITION WHILE AT NORMAL COCKPIT PRESSURE. FACE VISOR SHOULD RESPOND AUTOMATICALLY IF COCKPIT PRESSURE IS REDUCED. REPORT ON PROGRESS BY 1 MARCH 64.

B. REPORT BY 1 MARCH 64 ON PROGRESS OF NEW DESIGN OF PRESSURE SUIT GLOVE.

C. INVESTIGATE NEW APPROACHES TO INSURE LIGHTER WEIGHT HELMET AS DISCUSSED IN SUPPLIERS MEETING ON 29 JAN 64. REPORT ON PROGRESS 15 MARCH 64.

D. HAVE PROTOTYPE OF WEDGE SOLE SHOES AND NEW DESIGN SPUR BY 15 MARCH 64.

E. INCORPORATE IN FLIGHT FEEDING PORT IN FPS HELMET BY 1 APRIL 64.

25X1

F. IMPROVE FPS WATCH POCKET DESIGN BY 1 APRIL 64.

25X1

G. REQUEST STATUS ON FACE BARRIER MODIFICATION BY 1 MARCH 64.

[redacted]

COORDINATING OFFICERS

[redacted]

JOHN FARANGOSKY: D/TECH

RELEASING OFFICER

SECRET

Copy No.

LOCKHEED-CALIFORNIA COMPANY

ENGINEERING STUDY ☐
CHANGE PROPOSAL ☒

LAC 22-10

NRO 25X1

DATE January 20, 1964

AFFECTS: ☐ ☒

PROJECT ☒

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
PRESSURIZATION SYSTEM	SUIT VENT LINE	AA-13-32

TITLE OF PROPOSAL: SUIT VENT AIR SYSTEM REGULATOR

NATURE OF PROPOSAL:

STAT Install [redacted] pressure regulator in airplane pressurization system. Part No. 392518-1-1 to be installed in A-12 serials 121,122,124 thru 135 and Part No. 392518-2-1 to be installed in AF-12 serials 1001 thru 1003. Dash numbers indicate pressure settings required for differences in systems.

REASON FOR PROPOSAL:

Present aircraft system meets all requirements for supply of air to pilot's pressure suit, however improper regulation of suit pressure can result in increased oxygen usage due to additional physical exertion imposed by "stiffness" of suit. Installation of pressure regulator will more precisely monitor supply of pressure irrespective of manual suit valve setting.

STAT approved by IN 71216 w1 filed ECP-11

ES — ESTIMATED COST AND TIME INVOLVED: STAT
ADDITIONAL FUNDING REQUIRED:

CP — ESTIMATED COST FOR KITS OR PARTS: Target Price
ADDITIONAL FUNDING REQUIRED: SEE PAGE 2 Ceiling Price

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT: SB No. 505 & 506 & 138

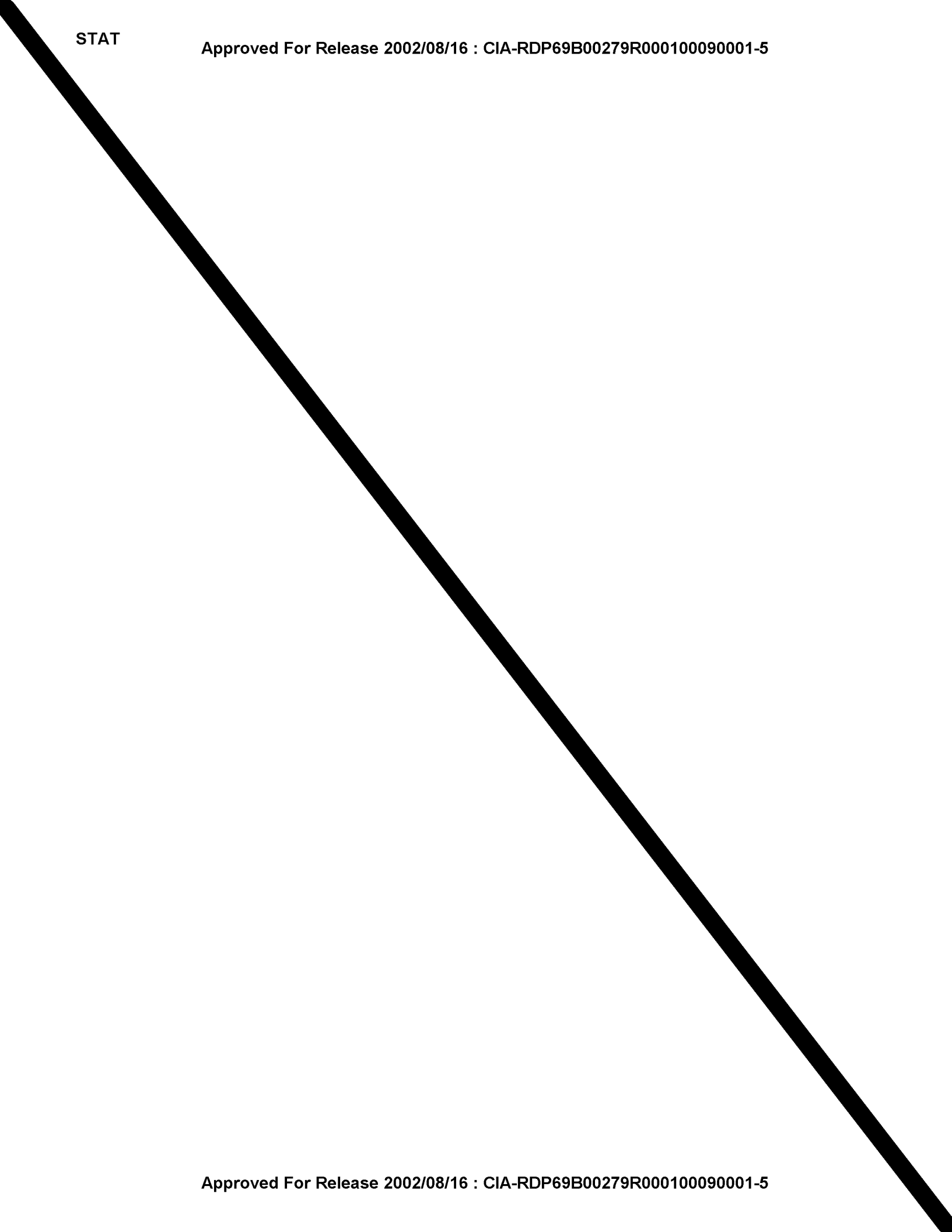
AVAILABILITY _____ WEEKS AFTER APPROVAL

DISPOSITION OF SPARES AFFECTED

NRO 25X1

INITIATED BY: LAC

APPROVED:



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED - CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☐	LAC 22-9-2
DATE 29 October 1964	AFFECTS: ☐	PROJECT ☒

NRO 25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL : LIGHTNING TESTS

NATURE OF PROPOSAL:

1. Prepare for and conduct lightning tests on a plastic rudder using the metal stub fin from the static test article as supporting structure.
2. Prepare for and conduct lightning tests on a section of the nose.
3. Tests were conducted at [redacted] STAT
4. Prepare and submit reports on the results of the above tests.

REASON FOR PROPOSAL :

These tests are required to increase the safety of the operation. The tests will furnish information relating to the strike probability patterns, the nature and extent of resultant damage, and indicate problem areas requiring fixes.

Fixes resulting from these tests are not a part of this ECP.

This revised ECP is submitted to add Item 2,above, to the scope of the job.

Approved by [redacted] STAT

ES	ESTIMATED COST AND TIME INVOLVED :	STAT
	ADDITIONAL FUNDING REQUIRED :	
CP	ESTIMATED COST FOR KITS OR PARTS :	Target Price / Ceiling Price
	ADDITIONAL FUNDING REQUIRED : (See Page 2)	

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

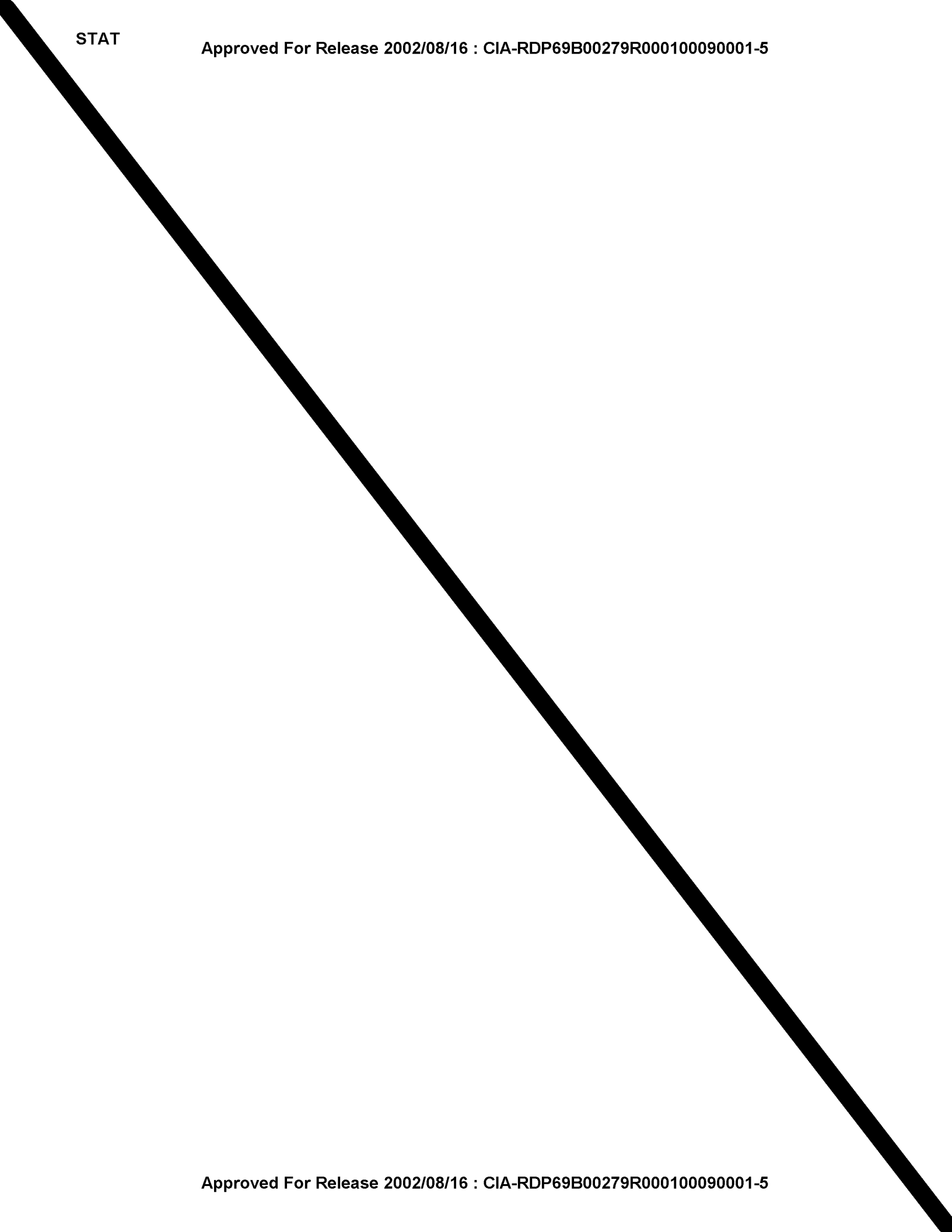
EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
NOT APPLICABLE	

DISPOSITION OF SPARES AFFECTED
NOT APPLICABLE

NRO 25X1

INITIATED BY :	APPROVED :
CLJ	



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

25X1

CLASSIFIED MESSAGE

SECRET

ROUTING

1	ASD/OSA	9	
2	D/TECH	10	
3	AD/OSA	11	
4	MD/OSA	12	25X1
5	CD/OSA	13	
6	D/FA/OSA	14	
7	RB/OSA	15	
8		16	

	DEFERRED		PRIORITY	INITIALS
X	ROUTINE		OPERATIONAL IMMEDIATE	INITIALS

ORIG [redacted]
UNIT: ASD/OSA
25X1 EXT [redacted]
DATE: 10 FEB 64
25X1 TO [redacted]
FROM: DIRECTOR
CONF: OSA 1-15
INFO:

25X1 25X1 25X1 40545

TO [redacted] INFO [redacted] CITE [redacted] 0919

OXCART

1. AS A RESULT OF THE SUPPLIERS CONFERENCE OF 29 JAN AT LAC DEALING WITH AEROMEDICAL AND LIFE SUPPORT SYSTEMS, THE FOLLOWING PRIORITY LISTING OF PROBLEM AREAS ARE DEFINED:

LAC

A. ASSUME RESPONSIBILITY OF DESIGNING A BALANCING VALVE WHICH WILL INSURE EQUAL FLOW OF OXYGEN FROM BOTH SYSTEMS. ACCEPTABLE TOLERANCE TO BE 200 PSI DIFFERENTIAL. REQUEST BI-MONTHLY REPORTS ON THIS PRIORITY ITEM BE SUBMITTED TO THIS HQS STARTING 1 MARCH 64. ILLEGIB ILLEGIB

B. INSTALL 1100 CU. IN. OXYGEN BOTTLES [redacted] IN AT LEAST ONE A/C BY 29 FEB 64. [redacted] ILLEGIB ILLEGIB [redacted]

C. CONTINUE PRESENT EFFORT TO INSTALL NEW REGULATOR FOR SUIT VENT PRESSURE AT 10" - 40" OF H_2O AND APPROX. 12 CFM. IT IS UNDERSTOOD ONE WILL BE INSTALLED BY 1 MARCH 64, TWO BY 15 MARCH 64.

COORDINATING OFFICERS

SECRET

GROUP 1 Excluded from automatic downgrading and declassification

RELEASING OFFICER AUTHENTICATING OFFICER

 Copy No.

CLASSIFIED MESSAGE

SECRET

ROUTING

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PRECEDENCE				INITIALS
	DEFERRED		PRIORITY	
	ROUTINE		OPERATIONAL IMMEDIATE	INITIALS

PAGE 3

INFO CITE

FIREWELL CO.

A. DEVELOP PARACHUTE SUPPORT BLOCK WITH OPTIMUM WEIGHT CHANGE RESPONSE TO INSURE MINIMUM WEIGHT OF PARACHUTE ON PILOTS SHOULDERS. IF POSSIBLE, SPACE FOR SMALL SURVIVAL ITEMS SHOULD BE PROVIDED. PROTOTYPE AVAILABLE 20 FEB 64.

B. ON BASIS OF INDIVIDUAL PILOTS, CUSTOMIZE SEAT CUSHIONS FOR THE SURVIVAL KIT. REPORT ON PROGRESS ON AT LEAST ONE PILOT BY 1 MARCH 64.

C. DESIGN PAN TO INCORPORATE NEW PARACHUTE RELEASES AND EMERGENCY OXYGEN SUPPLY IN PRESENT PARACHUTE CONFIG. EIGHTY CU. IN. OF OXYGEN TO BE SUPPLIED IN DUAL SYSTEM DESIGN.

D. CONTINUE EFFORTS TO REDUCE SUIT CONTROLLER BACK PRESSURE. REQUEST REPORT ON PROGRESS BY 1 MARCH 64.

DAVID CLARK CO.

A. PROCEED ON A PRIORITY BASIS ON A DESIGN TO

COORDINATING OFFICER

SECRET

GROUP 1 Excluded from automatic downgrading and declassification

RELEASING OFFICER AUTHENTICATING OFFICER

 Copy No.

CLASSIFIED MESSAGE

SECRET

ROUTING

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PRECEDENCE					INITIALS
		DEFERRED		PRIORITY	
		ROUTINE		OPERATIONAL IMMEDIATE	INITIALS

ORIG :
UNIT :
EXT :
DATE:

TO :

FROM:

CONF:

INFO :

PAGE 2

TO INFO CITE

D. CHANGE OXYGEN PRESSURE WARNING LIGHT TO INDICATE BOTH LOW AND HIGH OXYGEN PRESSURE.

E. EXPEDITE INVESTIGATION OF METHOD FOR STOWING OR ROTATING RUDDER PEDALS TO ENABLE PILOT TO STRAIGHTEN LEGS.

F. PROCEED WITH QUALIFICATION OF PARACHUTE RELEASE INCORPORATING STABILIZATION CHUTE RELEASE AND MAIN PARACHUTE DEPLOY IN ONE DEVISE VS. PRESENT TWO DEVICES. QUALIFICATION OF THIS DEVICE WILL HAVE TO BE PERFORMED BY LAC. REQUEST QUALIFICATION TESTS AND THEIR RESULTS BE COORDINATED WITH [redacted] AT WRIGHT FIELD. 25X1

G. MODIFY EJECTION SEAT HEADRESTS AS PROPOSED AT SUPPLIERS CONF.

H. INVESTIGATE THE POSSIBILITY OF INSTALLING THE [redacted] ON THE EJECTION SEAT AS DISCUSSED BETWEEN [redacted] 25X1 25X1

COORDINATING OFFICERS

SECRET

GROUP 1 Excluded from automatic downgrading and declassification

RELEASING OFFICER AUTHENTICATING OFFICER

 Copy No.

LOCKHEED CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-16
DATE April 30, 1964	AFFECTS : [redacted] ☐	PROJECT ☒ 25X1 NRO

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
Oxygen System		

TITLE OF PROPOSAL : Oxygen System Low Pressure Warning Light

NATURE OF PROPOSAL :

Addition of low pressure switch to oxygen feed line. The additional pressure switch will be connected to existing light. Upon addition of pressure switch both high and low pressure system malfunction will be indicated by common warning light. S/N 121, 122, 124-131, 134 & 135 will be effected by this change.

STAT

REASON FOR PROPOSAL :

1. Headquarters message [redacted] Requests ECP.
2. LAC does not concur that this warning light is a necessity in the present system. In addition, the balance valve provided under ECP 22-11 eliminated the need for this installation as stated in the original request for this light by the Area.
3. Any consideration of ECP 22-15 LOX Retrofit would further negate the need for this system.

ES ESTIMATED COST AND TIME INVOLVED :

ADDITIONAL FUNDING REQUIRED :

CP ESTIMATED COST FOR KITS OR PARTS : Budgetary Estimate: Fabrication (See page 2) Engr. and Instl. Total

ADDITIONAL FUNDING REQUIRED :

[redacted]

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD :

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
Service Bulletin will be provided	

DISPOSITION OF SPARES AFFECTED

N/A

STAT NRO 25X1

INITIATED BY :	APPROVED : [redacted]
Project Headquarters	

SPF-1A

Next 4 Page(s) In Document Exempt

STAT

Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-14
DATE 12 March 1964	AFFECTS: ☐	PROJECT ☒

NRO 25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
INS SYSTEM		

TITLE OF PROPOSAL: REVISED INS RACK INSTALLATION

NATURE OF PROPOSAL:

Design, Fabricate & Install new INS Rack. Involves Rewiring and Replumbing of components. Installation to be provided on all INS Systems for A-12 Aircraft. Will be accomplished in the field with service kit for aircraft in the field. Involves S/N 121,122,125-133.

REASON FOR PROPOSAL:

Provides faster and easier installation and removal of INS Equipment for service and repair. Permits complete INS System to be checked on the bench and installed in the aircraft as a complete system rather than components. Will alleviate cable breakage problems.

STAT

approved by

ES	ESTIMATED COST AND TIME INVOLVED:	STAT
	ADDITIONAL FUNDING REQUIRED:	
CP	ESTIMATED COST FOR KITS OR PARTS:	
	ADDITIONAL FUNDING REQUIRED: See Page 2	Target Ceiling

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☒	☐	☐	☐

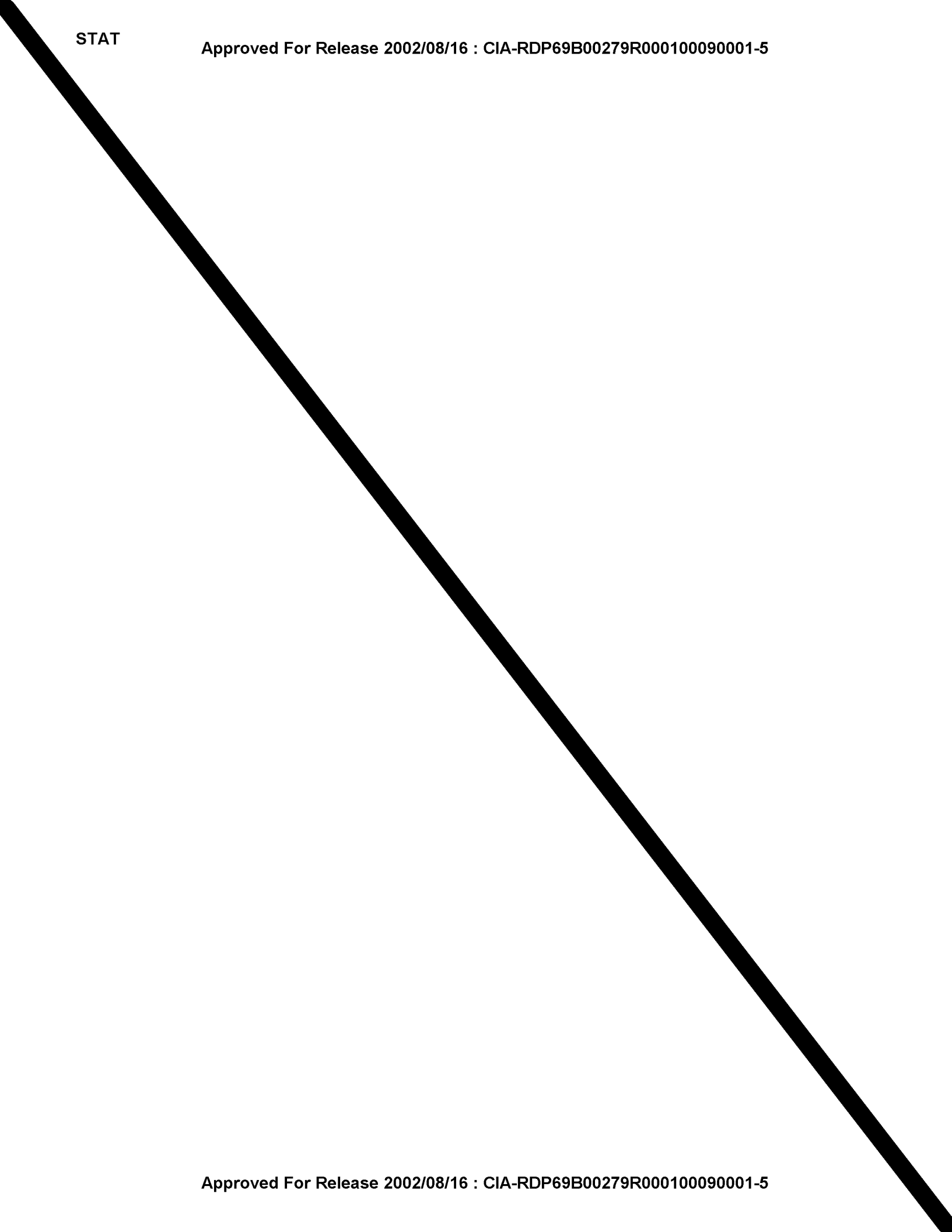
EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY
Service Bulletin #454	_____ WEEKS AFTER APPROVAL

DISPOSITION OF SPARES AFFECTED

NRO 25X1

INITIATED BY:	APPROVED:
LAC	



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED - CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-13-1
DATE 2 September 1964	AFFECTS: ☐	PROJECT ☒

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL: PERISCOPE IMPROVEMENTS

NATURE OF PROPOSAL:

1. Feasibility study resulting in the design and development of a prototype lens for increased forward look capability.

2. Design, development and production of a new Periscope Reticle incorporating cross hairs which follow the distortion of the periscope. This reticle is being incorporated into all A-12 aircraft. (14 Kits and 4 spare reticles).

Approved by: 2-9-65
filed in 22-9-2

STAT

REASON FOR PROPOSAL:

The increased forward look study was a result of pilot's complaint about a blind spot between window visibility and persicope visibility. Headquarters' TWX 4343 requested an ECP for this program.

The new reticle was requested by pilots. Besides the distortion correction, this reticle provides the pilot with the ability to set his course by using the sun compass.

This ECP is revised to include Item 2 above and to establish a target/ceiling price.

ES	ESTIMATED COST AND TIME INVOLVED:		STAT
	ADDITIONAL FUNDING REQUIRED:		
CP	ESTIMATED COST FOR KITS OR PARTS:	Target Price Ceiling Price	
	ADDITIONAL FUNDING REQUIRED: See Page 2.		

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

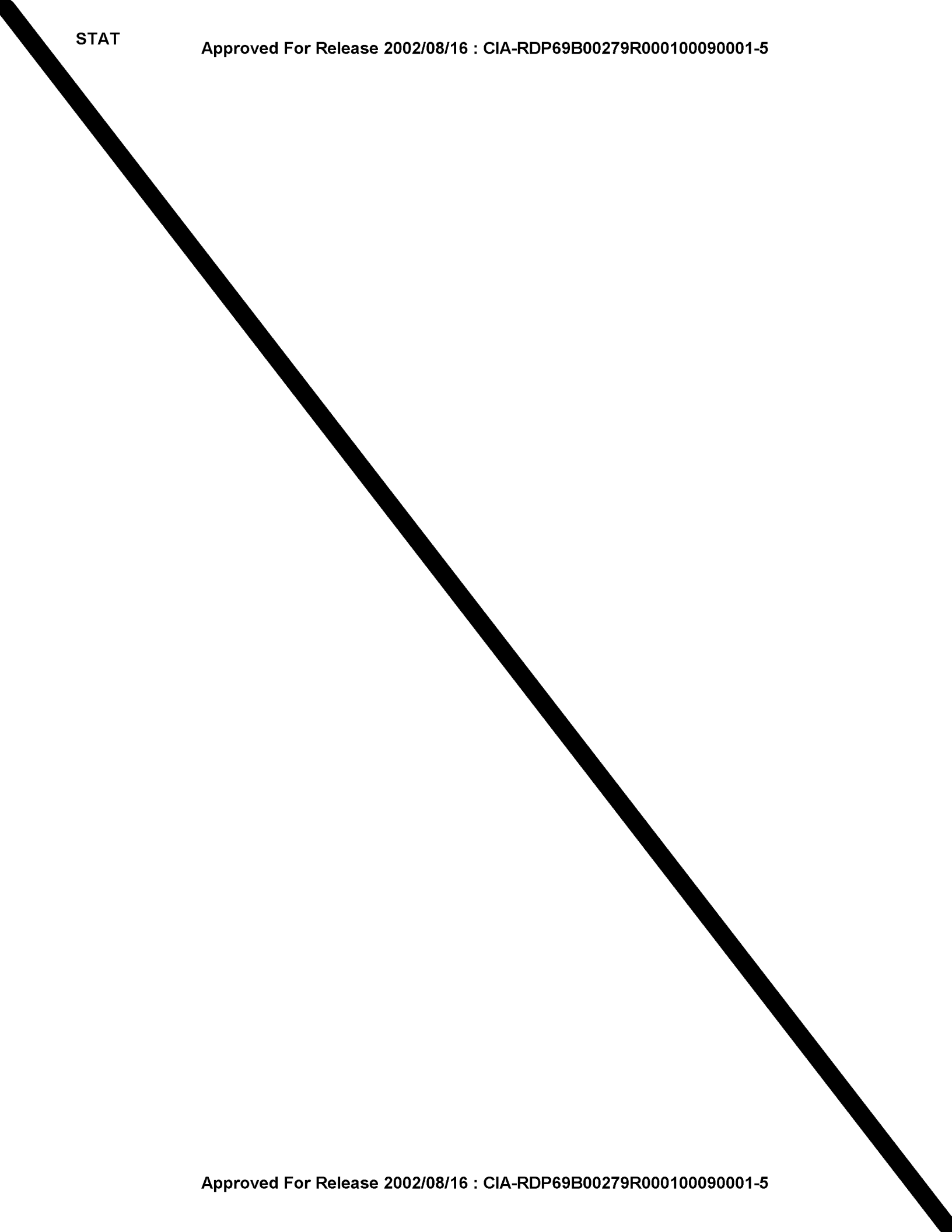
EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
SERVICE BULLETIN 608 FOR THE RETICLE	

DISPOSITION OF SPARES AFFECTED

NRO 25X1

INITIATED BY:	APPROVED:	
PROJECT HEADQUARTERS		



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL [X]	LAC 22-13
DATE 14 March 1964	AFFECTS : [ ] ☐	PROJECT [X]

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
PERISCOPE		

TITLE OF PROPOSAL : INCREASED FORWARD LOOK STUDY - PERISCOPE

NATURE OF PROPOSAL :

This is a feasibility study to determine whether the forward sighting of the present periscope can be increased. We are proceding with this study; results thereof should be available in early April.

REASON FOR PROPOSAL :

This proposal stems from pilots complaints as to the blind spot between forward visibility gained thru the windows and the visibility provided by the periscope. We believe [ ] fwd. vision at cruise altitude is sufficient, but the pilots are asking for [ ] Any change to periscope fwd. coverage should be carefully considered with regard to operations.

STAT
STAT

ES — ESTIMATED COST AND TIME INVOLVED :
ADDITIONAL FUNDING REQUIRED : STAT

CP — ESTIMATED COST FOR KITS OR PARTS :
ADDITIONAL FUNDING REQUIRED : Budgetary Price [ ]

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	[X]	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
Not Applicable	

DISPOSITION OF SPARES AFFECTED
Not Applicable

INITIATED BY :	APPROVED : [ ]
LAC	

NRO 25X1

NRO 25X1

SP-E-1A

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	L A C 22-12-1
DATE 18 September 1964	AFFECTS: ☐ ☒	PROJECT ☒
NAME OF MAJOR COMPONENT: EJECTION SEAT & PARACHUTE	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

NRO 25X1

TITLE OF PROPOSAL: A-12 PARACHUTE IMPROVEMENT PROGRAM

NATURE OF PROPOSAL: PHASE I Design and development of new timers; includes manufacture of these dual timers and a single timer for test and qualification of dual timer.
PHASE II Support [redacted] by STAT providing:

1. Engineering and mechanical assistance at the test site.
2. Modifications to C-2 seat, as required for A-12 installations, for test. (Includes catapults, timers, iniators, etc., and all equipment required to checkout pyrotechnics.)
3. Engineering development and qualification of new steel catapult.
4. Engineering of improvements to timer to provide internal sleeve and anti-reset cam.
5. Engineering required to lower the vent-hose disconnect due to extra length of new parachute.
6. Engineering required for seat changes as the result of the new parachute.

REASON FOR PROPOSAL: 1. Remove the parachute restrictions, stiffness and weight off of the pilots shoulders. 2. Move pilot back on seat cushion. 3. Provide more pilot leg room. 4. Improve free-fall condition. 5. Relocate green apple. 6. Reduce parachute weight. 7. Improved maintenance of parachute and timers. 8. New catapult provides additional altitude for better seat/plane separation.

[redacted] gives technical approval of Phase I

requests LAC assistence for Phase II

STAT

Approved by [redacted] 9-9-65 filed in 22-9-2

This revised ECP is submitted to alter the scope, including the addition of the new catapult development, and to establish a target/ceiling price.

STAT

ES	ESTIMATED COST AND TIME INVOLVED:	
	ADDITIONAL FUNDING REQUIRED:	
CP	ESTIMATED COST FOR KITS OR PARTS: (See Page 2) Target Price / Ceiling Price	[redacted] STAT
	ADDITIONAL FUNDING REQUIRED:	

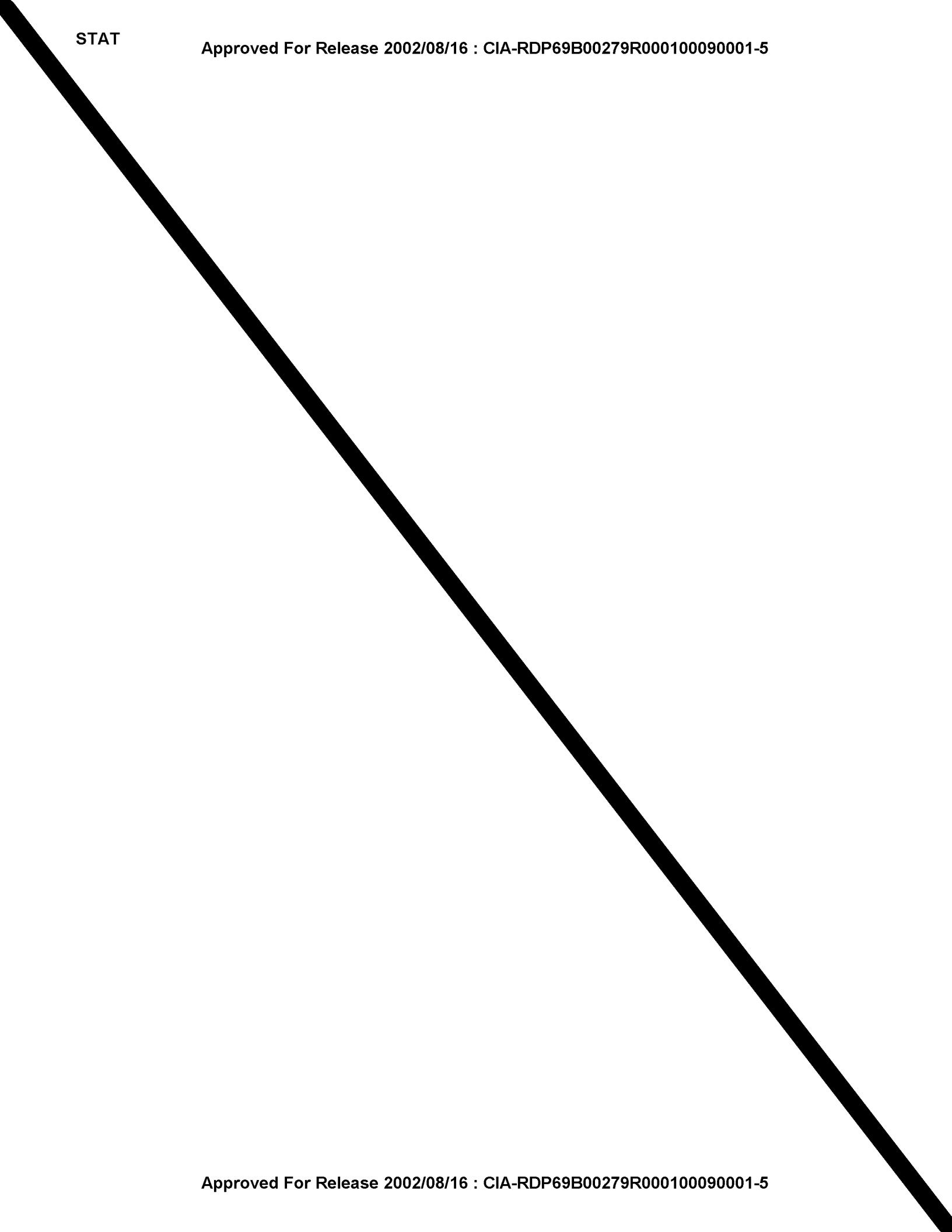
ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT: NOT APPLICABLE	AVAILABILITY _____ WEEKS AFTER APPROVAL
DISPOSITION OF SPARES AFFECTED: NOT APPLICABLE	
INITIATED BY: CLJ	APPROVED: [redacted]

NRO 25X1



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-12

DATE 14 March 1964 | AFFECTS: ☐ ☒ | PROJECT ☒

NRO 25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
PARACHUTE, PILOT		

TITLE OF PROPOSAL: THINNER, LIGHTER PARACHUTE

NATURE OF PROPOSAL:

Phase I Design & Development of New Timers, including building of 3 dual timers and 1 single timer for tests.

Phase II Complete of Design, Development and Testing of improved Parachute Package.

Phase III Retrofit of 30 to 40 existing Chutes in a turnaround program.

REASON FOR PROPOSAL: 1. Remove the parachute restriction, stiffness, and weight off of the pilot's shoulders. 2. Move pilot back on seat cushion. 3. Provide more pilot leg room. 4. Improve chute deployment - more pull force on rip cord pins. 5. Eliminate present free-fall, which could be [redacted] maximum. 6. Relocate green apple to right hand side and incorporate the emergency oxygen pressure gage for inflight viewing. 7. Improve zero lanyard activation. Reduce hazard of pilot to seat collision on man/seat separation. 8. Reduce parachute weight by six pounds. 9. Provide an individual fit parachute support spacer relieve chute weight - Allows pilot freedom of movement. 10. Improve maintainance and service life of parachute and timers.

We are proceding with Phase I on basis of verbal approval given by John P. during week of 1-27-64.

ES	ESTIMATED COST AND TIME INVOLVED: STAT STAT	
	ADDITIONAL FUNDING REQUIRED:	
CP	ESTIMATED COST FOR KITS OR PARTS: Budgetary Price Phase I Phase II Phase III	
	ADDITIONAL FUNDING REQUIRED:	

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☒	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
Not Yet Available	

DISPOSITION OF SPARES AFFECTED

Not Yet Available

NRO 25X1

INITIATED BY:	APPROVED:		
LAC			

LOCKHEED - CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-11-1
DATE 20 November 1964	AFFECTS: ☐	PROJECT ☒

NRO 25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
Oxygen System		

TITLE OF PROPOSAL: OXYGEN SYSTEM BALANCE VALVE

NATURE OF PROPOSAL:

1. Design and development of Oxygen System Balance Valve.
2. Design, fabrication and assembly of kits required to install the Balance Valve.
3. The Balance Valve will be installed in 12 gaseous oxygen system A-12 Aircraft. Balance Valve will be removed upon incorporation of ECP 22-18 Lox System. Installation cost is not a part of this ECP.

Approved by 2-9-65 date in 22-9

STAT

REASON FOR PROPOSAL:

The Oxygen System Balance Valve provides equal usage of both oxygen systems during normal operation. Upon failure of one system, the valve automatically removes that system from usage and does not allow oxygen from the other system to be lost. This feature provides for complete duality of the systems.

ES	ESTIMATED COST AND TIME INVOLVED:		
	ADDITIONAL FUNDING REQUIRED:		
CP	ESTIMATED COST FOR KITS OR PARTS:	Target Price Ceiling Price	STAT
	ADDITIONAL FUNDING REQUIRED: See Page 2.		

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

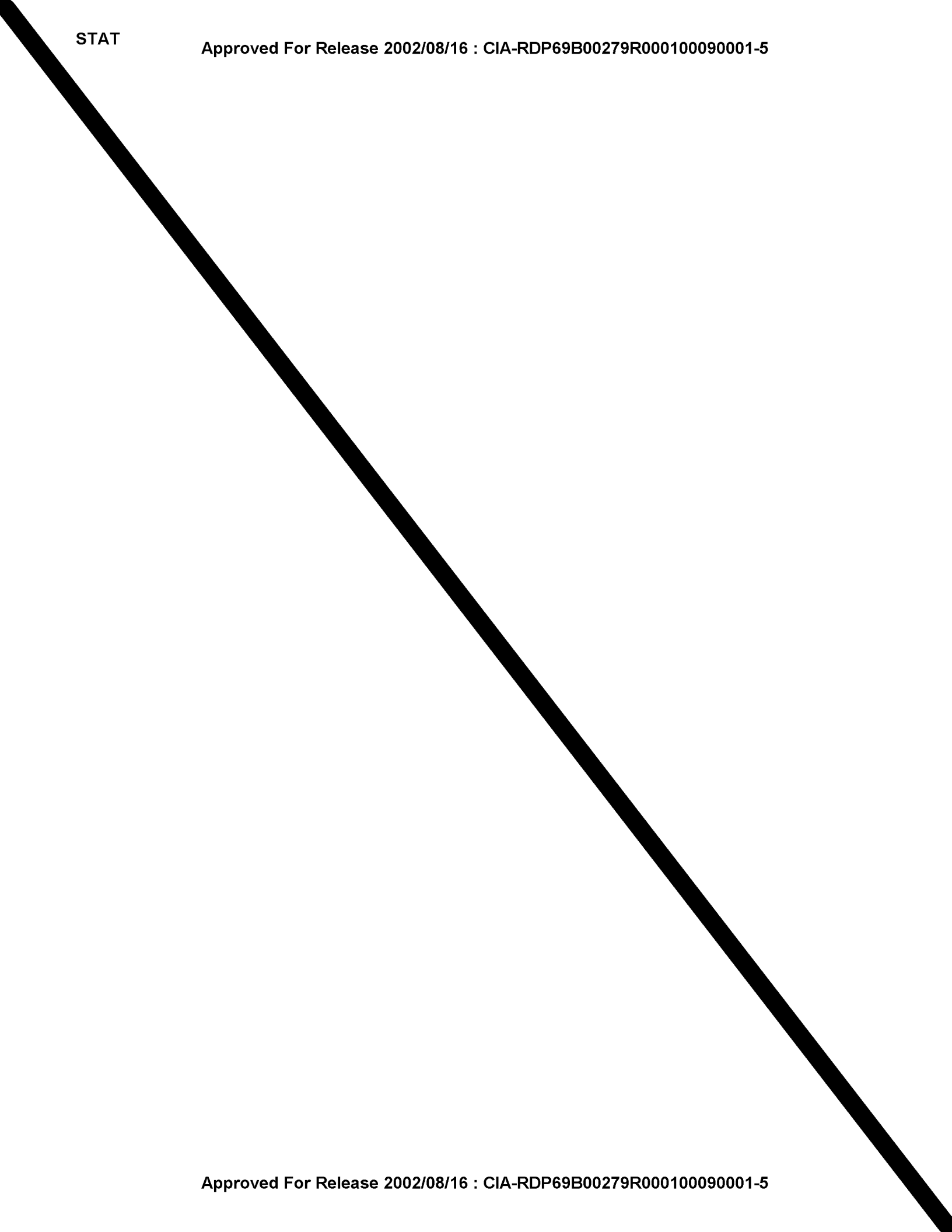
SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
SERVICE BULLETINS 552 & 609	

DISPOSITION OF SPARES AFFECTED

NOT APPLICABLE

NRO 25X1

INITIATED BY:	APPROVED:		
PROJECT HEADQUARTERS			



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED-CALIFORNIA COMPANY

ENGINEERING STUDY ☐
CHANGE PROPOSAL ☒

LAC 22-11

NRO 25X1

DATE 12 March 1964

AFFECTS : [ ] ☒

PROJECT ☒

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
Oxygen System		

TITLE OF PROPOSAL : Oxygen System Balance Valve

NATURE OF PROPOSAL :

Phase I Design and Build one prototype balance valve; checkout prototype valve.

PhaseII Build twenty-eight (28) additional units and install twenty-one (21) units in A-12 & AF-12 Articles (excluding #132 and #133) one (1) of remaining valves will be subjected to qualification test and will be destroyed. Remaining six (6) valves will be spares.

We are proceeding with Phase I in accordance with authority given by [ ] 10 February 1964.

REASON FOR PROPOSAL :

Oxygen System Balance Valve will provide complete duality to oxygen system. Valve will allow concurrent oxygen usuage during normal operation. Upon failure of one system, pressure differential will close valve, shutting off failing system and allowing pilot to return using operational system.

STAT

ES ESTIMATED COST AND TIME INVOLVED : STAT

ADDITIONAL FUNDING REQUIRED :

CP ESTIMATED COST FOR KITS OR PARTS : Budgetary Price: Phase I

Phase II

ADDITIONAL FUNDING REQUIRED : [ ]

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☒	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT

AVAILABILITY _____ WEEKS AFTER APPROVAL

DISPOSITION OF SPARES AFFECTED

NR O25X1

INITIATED BY : PROJECT HEADQUARTERS

APPROVED : [ ]

SP-E-1A

Next 3 Page(s) In Document Exempt

Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-29
DATE 14 January 1965	AFFECTS: ☐	PROJECT ☒

25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
VOICE RECORDER		

TITLE OF PROPOSAL: PILOT VOICE RECORDER

NATURE OF PROPOSAL:

This ECP provides a destructible pilot voice recorder in all A-12 Aircraft (13 Ships). The program includes the selection of the recorder, development of a destruct system, modifications to the recorder to increase recording time to the level consistent with minimum playback intelligibility of sound, and production of kits required to incorporate the recorder system on all A-12 aircraft.

REASON FOR PROPOSAL:

This program satisfies Headquarters requirement for a destructible scratch pad for pilots. The recorder selected as best applicable for this requirement is a Dictet which is modified to slow down the speed and add a series of pyrofuse sandwiches for destruct capability. This recorder is outfitted with ½ mm tape and provides approximately one hour plus of recording time. The recorder is energized by an on-off switch and started by means of the pilot microphone button. The recording time provided should be sufficient for all operational missions presently planned. The destruct system is triggered by pilot ejection.

We are proceeding with this job on the basis of Headquarters verbal directive.

ES	ESTIMATED COST AND TIME INVOLVED:	STAT
	ADDITIONAL FUNDING REQUIRED:	
CP	ESTIMATED COST FOR KITS OR PARTS:	Budgetary Target Price
	ADDITIONAL FUNDING REQUIRED:	Estimate of Related Program Costs
		Estimated Total Program Costs

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
SERVICE BULLETIN TO BE WRITTEN	STAT

DISPOSITION OF SPARES AFFECTED

N/A

INITIATED BY:	APPROVED	
PROJECT HEADQUARTERS	Signed by Manual Signature Dock files	25X1

Next 1 Page(s) In Document Exempt

LOCKHEED - CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	L.A.C. 22-27-1
DATE 2 December 1964	AFFECTS: ☐	PROJECT ☒

25X1

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL : MAP CASE DESTRUCT SYSTEM

NATURE OF PROPOSAL:

Design, fabrication and assembly effort required to provide kits to equip A-12 S/N's 122, 125-132 with a destructible map case.

The system allows for destruction of maps upon initiation of airplane destruct system or upon pilot ejection. Map cases will be made out of plastic material and will be placed in right hand and left hand cockpit consoles. Each map case will have capacity for four (4) map holders. Upon initiation of destruct, fluid will be injected through top of map case and gaseous nitrogen will be injected from the bottom; nitrogen will cause liquid to circulate, ensuring destruct.

REASON FOR PROPOSAL :

1. This system satisifes Headquarters' request for a secure backup map capability.

2. This revised ECP provides firm Target and Ceiling Price information and to delete S/N 121, 134 and 135 from application. S/N 121, 134, and 135 will be provided with this capability at a later date if required.

Approved by [redacted] STAT
Date 3/9/65
file with 22-9-2

ES	ESTIMATED COST AND TIME INVOLVED :	STAT
	ADDITIONAL FUNDING REQUIRED :	
CP	ESTIMATED COST FOR KITS OR PARTS :	Target Price / Ceiling Price
	ADDITIONAL FUNDING REQUIRED : (See Page 2.)	

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

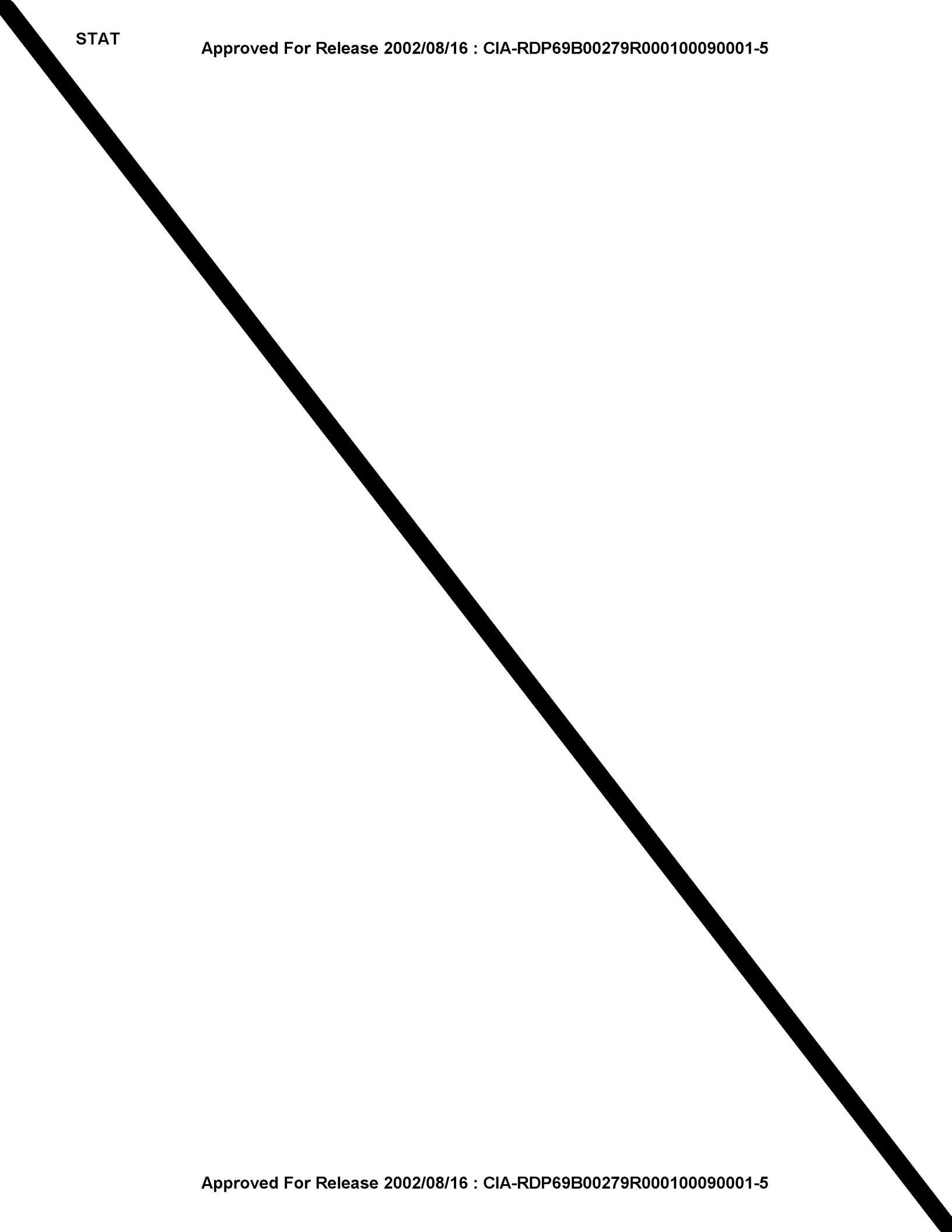
EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
SERVICE BULLETINS 599 and 642	

DISPOSITION OF SPARES AFFECTED
NOT APPLICABLE

INITIATED BY :	APPROVED :		
PROJECT HEADQUARTERS			

25X1



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

SECRET

CLASSIFIED MESSAGE

ORIG: [redacted]
UNIT: CD/OSA
EXT: [redacted]
DATE: 18 Aug 1964

25X1

SECRET

ROUTING

1	CD/OSA	9	
2	AD/OSA	10	
3	D/TECH	11	
4	MD	12	
5	RB	13	
6		14	
7		15	
8		16	

PRECEDENCE					INITIALS
		DEFERRED		PRIORITY	
	X	ROUTINE		OPERATIONAL IMMEDIATE	INITIALS

TO: [redacted]
25X1

FROM: DIRECTOR

CONF:

INFO:

25X1

OSA 1-15 Jm

21266

TO [redacted] INFO [redacted] CITE [redacted]

OXCART

25X1

X THE FOLLOWING ECP'S ARE TECHNICALLY APPROVED EXCEPT AS NOTED BELOW. 25X1

22-6-1*	22-31**
22-7-1*	22-32**
22-27**	22-48**
22-28**	

A. ECP 22-6-1 INCLUDES MODIFYING 26 "A" UNITS IN A-12'S, 24 "B" UNITS IN KC-135'S AND THE EQUIVALENT OF 5 UNITS FROM SPARES. SUGGEST FIRST SENTENCE BE REWORDED AS FOLLOWS:

"THIS ECP INCLUDES THE EFFORT REQUIRED TO MODIFY ALL OF THE AIRBORNE ARC-50 EQUIPMENT AND COMPONENTS, BOTH A-12 AND KC-135, TO THE "Y" CONFIGURATION."

B. ECP 22-32 - BECAUSE OF THE SHORTCOMINGS OF THE FIREWARNING SYSTEM NOW BEING USED ON THE A-12, NUMEROUS PREMATURELY ABORTED FLIGHTS AND UNNECESSARY ENGINE REMOVALS WERE INCURRED. THE RESPONSIBILITY FOR THESE ABORTS AND REMOVALS WOULD APPEAR TO LIE WITH YOU WHO, IN THE FINAL ANALYSIS, ARE OBLIGATED TO PROVIDE

COORDINATING OFFICERS

RELEASING OFFICER

SECRET

SECRET

GROUP 1 Excluded from automatic downgrading and declassification

AUTHENTICATING OFFICER

 Copy No.

SECRET

CLASSIFIED MESSAGE

ORIG :
UNIT :
EXT :
DATE:

SECRET

ROUTING			
1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	
8		16	

TO :

FROM:

CONF:

INFO :

PAGE TWO

PRECEDENCE					
		DEFERRED		PRIORITY	INITIALS
	X	ROUTINE		OPERATIONAL IMMEDIATE	INITIALS

TO INFO CITE

A SATISFACTORY FIREWARNING SYSTEM. THEREFORE WE FEEL THAT PROFIT, IF ANY, FOR THIS ECP IS SUBJECT TO FURTHER DISCUSSIONS.

* FIRM TARGET AND CEILING PRICE

** BUDGET ESTIMATES

END OF MESSAGE

25X1

C/CD/OSA
RELEASING OFFICER

COORDINATING OFFICERS

SECRET

GROUP 1
Excluded from automatic downgrading and declassification

AUTHENTICATING OFFICER

 Copy No.

LOCKHEED - CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-27
DATE 25 July 1964	AFFECTS: [ ] ☐	PROJECT ☒
NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

NRO 25X1

TITLE OF PROPOSAL: MAP CASE DESTRUCT SYSTEM

NATURE OF PROPOSAL:

Design, fabricate, and install a system which allows for destruction of maps upon initiation of airplane destruct system or upon pilot ejection. Map case will be made out of plastic material and will be placed in right hand and left hand cockpit consoles. Each map case will have capacity for four (4) map holders. Upon initiation of destruct, fluid will be injected through top of map case and gaseous nitrogen will be injected from the bottom; nitrogen will cause liquid to circulate, ensuring destruct. This system will be installed in Articles 121, 122, 125 - 132, 134 & 135.

REASON FOR PROPOSAL:

1. Provide for security of airplane route information.
2. Provide a back-up map system.
3. We are proceeding on this job.

The ECP value indicated below does not include Spares and GSE of [ ] approximate value. Spares and GSE will be procured via Purchase Requests under CT-22 Call Section.

STAT

ES	ESTIMATED COST AND TIME INVOLVED:	
	ADDITIONAL FUNDING REQUIRED:	
CP	ESTIMATED COST FOR KITS OR PARTS: Budgetary Estimate [ ]	STAT
	ADDITIONAL FUNDING REQUIRED:	

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT: SERVICE BULLETIN 599	AVAILABILITY _____ WEEKS AFTER APPROVAL
DISPOSITION OF SPARES AFFECTED: NOT APPLICABLE	
INITIATED BY: PROJECT HEADQUARTERS	APPROVED: [ ]

NRO 25X1

LOCKHEED-CALIFORNIA COMPANY	ENGINEERING STUDY ☐ CHANGE PROPOSAL ☒	LAC 22-26
DATE 3 June 1964	AFFECTS : ☐	PROJECT ☒

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE
PERISCOPE	PROJECTOR	

TITLE OF PROPOSAL : PERISCOPE PROJECTOR FILM DESTRUCT SYSTEM

NATURE OF PROPOSAL :
Provide a method for destroying the periscope projector film in case the destruction of the airplane is required. Ignitor Assembly proposed will provide complete destruction of film at cruise altitude with nose depressurized to outside ambient pressure.

Destruct system will become active upon the arming and initiating of the airplane destruct system, or by pilot ejection.

This ECP will provide for modification of the five (5) existing projector systems and procurement of destruct units for all A-12 articles.

REASON FOR PROPOSAL :

Provide for security of airplane route information.

We are proceeding with this job.

STAT

approved by [redacted] date 30 July 64 filed on other side of file w/Sec-17

ES	ESTIMATED COST AND TIME INVOLVED : ADDITIONAL FUNDING REQUIRED :		
CP	ESTIMATED COST FOR KITS OR PARTS : Target Price / Ceiling Price ADDITIONAL FUNDING REQUIRED :	[redacted]	STAT

ITEMS AFFECTED BY PROPOSAL :

SAFETY	MISSION EFFEC-TIVENESS	PERFORM-ANCE	OPERATING PROCEDURE	INTER-CHANGE-ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTE-NANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTE-NANCE MANUAL
☐	☒	☐	☐	☐	☐	☐	☐	☐	☐	☐

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

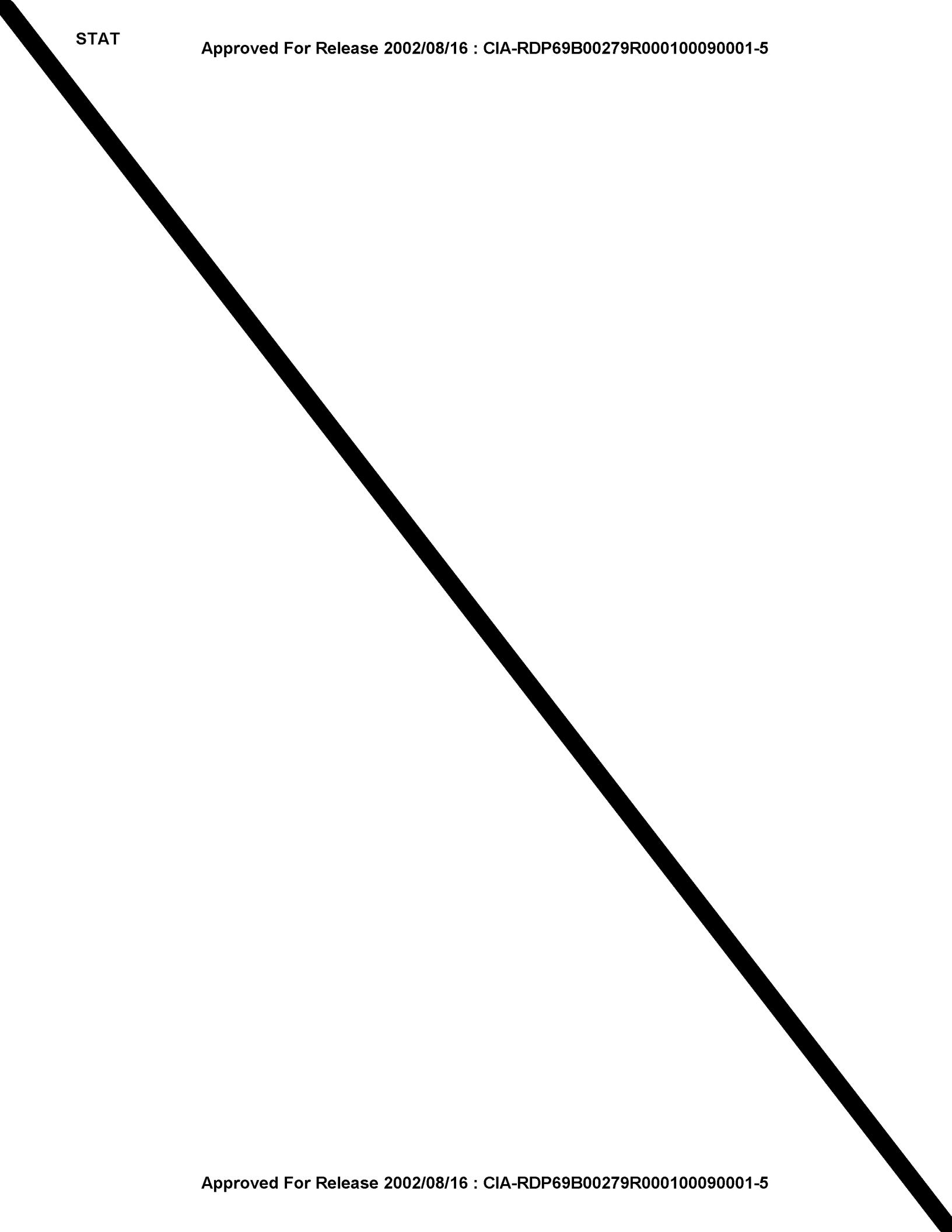
SOURCE OF PARTS FOR KIT	AVAILABILITY _____ WEEKS AFTER APPROVAL
Service Bulletin to be Written	

DISPOSITION OF SPARES AFFECTED
Not Applicable

25X1 NRO

INITIATED BY :	APPROVED :	
PROJECT HEADQUARTERS		OK GP

1337



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

CLASSIFIED MESSAGE

SECRET

DATE 1545Z 26 MAY 64

ROUTING			
1	DFeith	9	
2		10	
3		11	
4	MO	12	
5	DFA	13	
6	SD	14	
7	OXC	15	
8	RB	16	

ROUTINE

IN 80422

TO : DIRECTOR

FROM : [redacted] 25X1

ACTION:

INFO : OSA 1-15 Ea

25X1

TOR: 1721Z 26 MAY 64

TO [redacted] INFO [redacted] 25X1 CITE [redacted] 25X1

OXCART

25X1 FROM [redacted]

SUBJECT: DESTRUCT SYSTEMS STATUS

1. TEST ON PROJECTOR FILM DESTRUCT USING 10 FT. ACETATE BASE COLOR FILM BACKED WITH CLEAR NITRATE BASE FILM AT AMBIENT PRESSURE

25X1 OF [redacted] ACHIEVED APPARENT COMPLETE DESTRUCTION.

25X1 2. ALTERNATE ROUTE DATA, BACK-UP AND EMERGENCY DATA, PLUS [redacted] 25X1

[redacted] OF STRIP MAP COVERAGE IN VN SCALE CAN BE INCLUDED ON [redacted] 25X1

OF FILM. SAME DATA BUT STRIP MAP COVERAGE IN GNC SCALE CAN BE

25X1 INCLUDED ON [redacted] OF FILM. LEADERS NOT INCLUDED.

3. FINAL TESTS TO BE CONDUCTED NEXT WEEK. WE WILL SUBMIT SAMPLES FOR YOUR INSPECTION.

4. E.C.P. NUMBER 22-26 COVERING THIS HAS BEEN PREPARED, AND IMPLEMENTATION WILL START NEXT WEEK.

5. TESTS CONDUCTED TO DATE ON DESTRUCTION OF WATER SOLUBLE MAPS INDICATE COMPLETE DESTRUCTION IS NOT ATTAINABLE ON EVERY TEST,

SECRET

GROUP 1
Excluded from automatic downgrading and declassification

6

BUT THAT SOME LARGE PIECES OF RESIDUE OFTEN REMAIN INTACT. EXAMINATION OF THESE PIECES, USING NATURAL, IR, AND UV LIGHT, FAIL TO PRODUCE READABLE OR OTHERWISE DISCERNABLE DATA, HOWEVER.

6. WE PLAN A FEW MORE TESTS ON THIS EQUIPMENT NEXT WEEK, AND WILL SEND SAMPLES FOR YOUR INSPECTION, IF DESIRED.

7. E. C. P. COVERING INSTALLATION IN VEHICLES IS IN PREPARATION.

8. OUR EFFORTS ON THE REQUIRED TAPE VOICE RECORDER TO DATE HAVE BEEN LIMITED TO A SEARCH FOR A SUITABLE UNIT AND CONSIDERATION OF LOCATION IN VEHICLE.

END OF MSG

PREVIOUS EDITIONS

CLASSIFIED MESSAGE

SECRET

ROUTING			
1	D/Tech	9	
2		10	
3		11	
4	CD	12	
5	MD	13	
6	DFA	14	
7	RB	15	
8		16	

ROUTINE

IN 73527

DATE 1839Z 15 APR 64

25X1

FO DIRECTOR

FROM

ACTION: OSA 1-15

INFO :

TOR: 1927Z 15 APR 64

25X1

TO

INFO

CITE

25X1

OXCART

25X1

ATTN: FROM

25X1

SUBJECT: PROJECTOR FILM DISTRUCT

1. SP-637 PROJECTOR FILM DESTRUCT REPORT SHOWED THAT THE ONLY PRACTICAL DESTRUCT METHOD WAS THROUGH THE USE OF NITRATE BASE COLOR FILM.

2. LACK OF THE ABOVE FILM HAS DELAYED SYSTEM QUALIFICATION TESTS TO PROVE OPERATIONAL STATUS.

3. A PARTIAL SHIPMENT OF WOULD SUFFICE FOR THESE TESTS.

END OF MESSAGE

25X1

SECRET

GROUP 1
Excluded from automatic downgrading and declassification

11

FORM 1206, USE PREVIOUS EDITIONS

CLASSIFIED MESSAGE

SECRET

NFG. 6-63

ROUTING			
1	OSA	9	SS
2	C	10	KB
3	DFA	11	
4	D/Tech	12	
5		13	
6		14	
7		15	
8	MD	16	

ROUTINE

DATE 2206Z 28 FEB 64

25X1

TO : DIRECTOR

FROM : [redacted]

ACTION: OSA 1-15

INFO :

Hazel

25X1

TOR: 0024Z 29 FEB 64

IN 65171

TO [redacted] INFO CITE [redacted]

OXCART OPS

25X1

SUBJECT IS MAP CANS AND FILM DESTRUCT SYSTEMS.

25X1 1. [redacted] ATTEMPTED ON NUMEROUS OCCASIONS TO SECURE A DEFINITE POLICY ON CARRYING MAPS IN THE COCKPIT. [redacted] 25X1 IS AWARE OF THE DECISION THAT EMPHASIZES ANYTHING CARRIED ON THE AIRCRAFT MUST HAVE THE CAPACITY OF BEING DESTROYED. A DESTRUCT SYSTEM FOR THE ROUTE FILM HAS BEEN PROGRESSING TO THE POINT OF BEING A VALID WORKABLE SYSTEM. [redacted] HAS APPRAISED [redacted] THESE DEVELOPMENTS [redacted] FORESEES NO PROBLEM AREAS FOR ROUTE FILM DESTRUCT.

25X1

25X1

25X1

2. THE SUBJECT OF DESTRUCTABLE MAPS PRESENTS AN ENTIRELY DIFFERENT SITUATION IN THAT NO SUITABLE WORKABLE SOLUTION HAS BEEN OFFERED BY [redacted] LAST TESTS ACCOMPLISHED DURING THE LATTER PART OF 1963 INDICATE AN UNSATISFACTORY SYSTEM DUE TO THE FOLLOWING:

25X1

A. SMALL AMOUNT OF MAPS WHICH COULD BE CARRIED PREVENTS A COMPLETE ROUTE PORTRAYAL.

B. STORAGE AREA FOR FLUID REQUIRED FOR WATER SOLUABLE MAPS

SECRET

GROUP 1
Excluded from automatic downgrading and declassification

7

WILL UTILIZE SPACE WHICH IS NOT AVAILABLE.

C. AT PRESENT, UNDER NO CIRCUMSTANCES DOES THE MAP DESTRUCT SYSTEM COMPLETELY DESTROY THE MAPS.

25X1 3. [redacted] NO SERIOUS EFFORT IS BEING PUT FORTH TO DEVELOP A DESTRUCT SYSTEM OR MAKE A DECISION WHETHER OR NOT DESTRUCTABLE MAPS SHOULD BE CARRIED ON THE AIRCRAFT. IF THE INTENT IS NOT TO CARRY DESTRUCTABLE MAPS, THEN, [redacted] FEELS 25X1 THAT THE FILM DESTRUCT SYSTEM SHOULD BE ALSO DISCONTINUED. IF, HOWEVER, THE DECISION IS TO CARRY DESTRUCTABLE MAPS, THEN CONCERTED EFFORTS SHOULD BE PUT FORTH TO DEVELOP A NEW DESTRUCT METHOD OR ATTAIN A LEVEL OF RELIABILITY AND PERFORMANCE WHEREBY THE OLD METHOD WOULD SATISFY THE REQUIREMENTS OF THE PROGRAM. YOUR COMMENTS ARE REQUESTED.

END OF MESSAGE

SECRET

OXC 4438
Copy 4 of 6

6 FEB 1963

MEMORANDUM FOR: Assistant Director, OSA

SUBJECT: Water Destruct System for Special Paper Maps, IDEALIST/OXCART

1. There is an obvious lack of priority assigned by Lockheed for the design and installation of the equipment required to utilize the special water soluble maps presently 25X1 being produced [redacted]

In compliance with a recommendation from General Doolittle, member of the President's Foreign Intelligence Advisory Board, a working group was established, on 9 August 1962, to provide projects IDEALIST and OXCART with maps and charts which are capable of emergency destruction. Attendance at this meeting included headquarters representatives from Operations, Development, Intelligence and Materiel. Outside agency representatives included 25X1 [redacted] and Lockheed.

2. Research and development work was completed by the Technical Services Division (TSD) to provide paper maps which will dissolve when submerged in water. The Materiel Division procured the necessary special paper [redacted] 25X1
25X1 [redacted] ls currently in production on particular [redacted] series charts as specified by the Intelligence Staff. Completion of the entire production is estimated by 1 March 1963. 25X1

3. The IDEALIST/OXCART vehicles must be equipped with a map container and suitable water reservoir, plumbing, valves and activation device in order that the map container may be flooded with water if an emergency so dictates. This particular requirement, established 9 August 1962, has not proceeded concurrently with map production. Therefore, we will shortly be faced with completed water-soluble charts, but with no existing storage/destruct system available for their use. The result will be a delay in operational employment of the charts unless Lockheed is encouraged to complete their testing and installation of the necessary equipment. To date, two fiberglas prototype containers have been produced and temporarily taped in one of the OXCART vehicles. Two additional containers have

SECRET

SECRET

CLASSIFIED MESSAGE

ROUTINE

1	CD/OSA	9	
2	AD/OSA	10	
3	D/TECH	11	
4	MD	12	
5	RB	13	
6		14	
7		15	
8		16	

PRECEDENCE		DEFERRED	PRIORITY	INITIALS
	X	ROUTINE	OPERATIONAL IMMEDIATE	INITIALS

ORIG: [redacted]
UNIT: CD/OSA
EXT: [redacted]
DATE: 18 Aug 1964

25X1

TO: [redacted]

FROM: DIRECTOR

25X1

INFO:

25X1

OSA 1-15 Jm

21286

TO [redacted] INFO [redacted] CITE [redacted]

OXCART

25X1 25X1

X THE FOLLOWING ECP'S ARE TECHNICALLY APPROVED EXCEPT AS NOTED BELOW.

22-6-1* 22-31**

22-7-1* 22-32**

22-27** 22-48**

22-28**

A. ECP 22-6-1 INCLUDES MODIFYING 26 "A" UNITS IN A-12'S, 24 "B" UNITS IN KC-135'S AND THE EQUIVALENT OF 5 UNITS FROM SPARES. SUGGEST FIRST SENTENCE BE REWORDED AS FOLLOWS:

"THIS ECP INCLUDES THE EFFORT REQUIRED TO MODIFY ALL OF THE AIRBORNE ARC-50 EQUIPMENT AND COMPONENTS, BOTH A-12 AND KC-135, TO THE "Y" CONFIGURATION."

B. ECP 22-32 - BECAUSE OF THE SHORTCOMINGS OF THE FIREWARNING SYSTEM NOW BEING USED ON THE A-12, NUMEROUS PREMATURELY ABORTED FLIGHTS AND UNNECESSARY ENGINE REMOVALS WERE INCURRED. THE RESPONSIBILITY FOR THESE ABORTS AND REMOVALS WOULD APPEAR TO LIE WITH YOU WHO, IN THE FINAL ANALYSIS, ARE OBLIGATED TO PROVIDE

COORDINATING OFFICERS

SECRET

SECRET

GROUP 1 Excluded from automatic downgrading and declassification

RELEASING OFFICER AUTHENTICATING OFFICER

 Copy No. 1

SECRET

CLASSIFIED MESSAGE

ORIG :
UNIT :
EXT :
DATE:

SECRET

ROUTING			
1		9	
2		10	
3		11	
4		12	
5		13	
6		14	
7		15	
8		16	

PRECEDENCE					
		DEFERRED		PRIORITY	INITIALS
	X	ROUTINE		OPERATIONAL IMMEDIATE	INITIALS

TO :

FROM:

INFO :

TO INFO CITE

A SATISFACTORY FIREWARNING SYSTEM. THEREFORE WE FEEL THAT PROFIT, IF ANY, FOR THIS ECP IS SUBJECT TO FURTHER DISCUSSIONS.

* FIRM TARGET AND CEILING PRICE

** BUDGET ESTIMATES

END OF MESSAGE

25X1

C/CD/OSA
RELEASING OFFICER

COORDINATING OFFICERS

SECRET

GROUP 1
Excluded from automatic downgrading and declassification

AUTHENTICATING OFFICER

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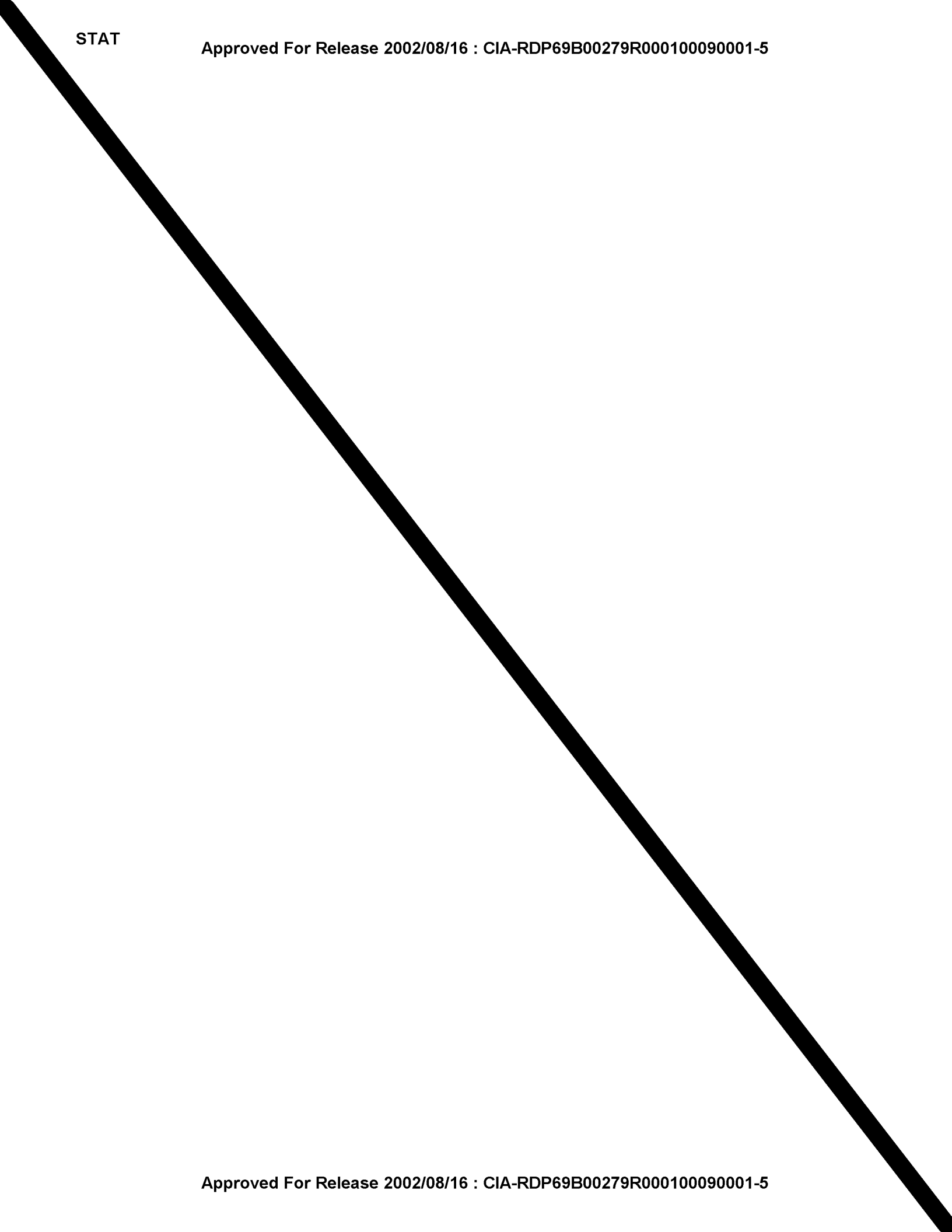

Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

OYC-7336
COPY 2 OF 2

28 July 1964

To: John Parangosky

25X1 cc: [redacted]

Subject: CT-22 ECP's FY '64 and FY '65

Reference: Letter CLJ to John P. dated 6 July 1964

Under a separate letter we are forwarding to you copies of ECP's 22-6-1, 22-7-1, 22-27, 22-28, 22-31, 22-32 and 22-48. You will note that these ECP's were listed in the referenced letter with different dollar values. The differences are due to better information and deletion of Article #133.

The attached revised ECP listing is being forwarded to you so that you will have the latest information available. Item 22-49 has been added as a result of the meeting last week at LAC.

Sincerely,

[redacted] 25X1

STATUS LEGEND

A	ECP Submitted and Approved
B	ECP Submitted and Not Yet Approved
C	ECP Not Yet Submitted
D	Job Underway or Completed
E	Job Not Yet Started

6-30-64

STAT

6-30-64
Revised 7-28-64

ECP No.	TITLE/DESCRIPTION	BUDGETARY ESTIMATE	FIRM PRICE TARGET	FIRM PRICE CEILING	ITEM NO. ON 4-30-64 LIST	STATUS
22-1-1					N/A	A & D
22-2-1					N/A	A & D
22-3-1					N/A	A & D
22-4-1					N/A	A & D
22-5-1					N/A	A & D
22-6-1	ARC-50 DME Improvements				N/A	A & D
22-7-1	ARC-50 Ground Stations				N/A	A & D
22-8-1	LOX Installation in #132 and #133 (See ECP)				N/A	A & D
22-9-1	Lightning Tests - Rudder (See ECP)				N/A	A & D
22-9-2	Added Lightning Tests - Nose Section (This will look at lightning effects on communications equipment in the nose section).				N/A	C & D
22-10	Suit Venting Air System Regulator (See ECP)				N/A	A & D
22-11	Oxygen System Balance Valve (See ECP)				N/A	A & D
22-12	A-12 Parachute Improvement Program - Phase I (See ECP)				N/A	A & D
22-12-1	A-12 Parachute Improvement Program - Phase II (This covers the equipment LAC is providing for El Centro tests, qualification of the steel 400 foot catapult, and LAC manpower to help conduct tests).				N/A	C & D
22-13	A-12 Periscope Improvement - Forward Look Study (See ECP)				N/A	A & D
22-13-1	Additional Periscope Work - Provide prototype Lens				N/A	C & D
22-14	Revised I.N.S. Rack (See ECP)				N/A	A & D
22-15					N/A	A & D
22-16	Oxygen System Low Pressure Warning Light (See ECP)				N/A	A & D
22-17	Replace Control Stick Grips (See ECP)				18	A & D
22-18	Retrofit of LOX System in A-12's (See ECP)				N/A	A & D
22-19					17	A & D
22-20					17	A & D
22-21					17	A & D
22-22					1	B & D

STAT

STAT

6-30-64
Revised 7-23-64

ECP NO.	TITLE/DESCRIPTION	BUDGETARY ESTIMATE - FIRM TARGET PRICE - CEILING	ITEM NO. ON 4-30-64 LIST	STATUS
22-23	[redacted]	[redacted]	22	C & D
			22	C & E
			10	C & D
22-24	Drag Chute Deploy Handle - (Replaces the switch which presently accomplishes this job).		N/A	C & D
22-25	Aero-Med. Instrumentation Study - (Covers time to familiarize LAC personnel with equipment provided by HQ's, and run environmental tests on pilot. [redacted]		N/A	A & D
22-26	Periscope Projector Film Destruct (See ECP)		N/A	B & D
22-27	Map Case Destruct - See ECP (Provides Map Cases and system required to destruct maps).		N/A	B & D
22-28	[redacted]		N/A	C & D
22-29	Pilot Voice Recorder - (Assumes that LAC will provide recorder . Voice recorder must have destruct capability).		2	C & E
22-30 *	Compressor Inlet Pressure Indicating System		3	B & E
22-31	SR-3 - Improved Gyro Heading Reference System - See EC (This is a backup for the INS. Testing to be done under Jet 250).		N/A	B & D
22-32	Improved Fire Warning System - See ECP (This system is sensitive to local overheat problems. Sensing device is dual system requiring input from both parts in order to transmit warning to pilot. Sensing element made by Fenwall).		7	C & D
22-33	Structural Strength Increase Kits - (This includes provisions for some functional systems changes).			

6-30-64
Revised 7-28-64

STAT

ECP NO.	TITLE/DESCRIPTION	BUDGETARY ESTIMATE	FIRM PRICE TARGET	FIRM PRICE CEILING	ITEM NO. ON 4-30-64 LIST	STATUS
22-34 *	[redacted]				13	C & E
22-35 *	Fuel System Readout Improvement - (Provides additional probes for attitude problem).				N/A	C & E
22-36 *	Develop and Build Three (3) Airplane Control Servo System Checkout Carts				4	C & E
22-37 *	I.N.S. Improvements - LAC Airplane changes as result of Honeywell effort.				5	C & E
22-38 *	Hydrogen Engine Start Modifications - (LAC Airplane changes as result of P&W changes in engine start fuel).				6	C & E
22-39 *	New Servo Valves for Intersystem Leakage - (This incorporates R-12 type equipment into A-12's and eliminates need for reserve oil tank).				9	C & E
22-40 *	Dual Initiator Qualification Program				N/A	C & E
22-41 *	[redacted]				15	C & D
22-42 *					N/A	C & E
22-43 *					N/A	C & E
22-44 *	Improve Pilot Fuel Control Capability - (Incorporates servo system to give pilot better ability to operate the fuel control system).				N/A	C & E
22-45 *	Enlarge Nitrogen System - (Increase the capacity of the nitrogen system to that required for the R-12. This will require a major modification to the nose wheel well).				11	C & E
22-46 *	Fuel Remaining Instrumentation - (Provide a visual count down of the fuel quantity used. Present system will be retained).				12	C & E
22-47 *	Improvements to ARC-50 ADF Antennas				19	C & E
22-48	Retrofit ADP Inlet Control in Four (4) A-12's				N/A	B & E
22-49	Fuel Management Revision				N/A	C & D
	ECP TOTALS.....					

* ECP number given for identification purposes only - subject to review and change.
In general, the above ECP estimates do not include

16 March 1964

To: John Parangosky

STAT [redacted]

Subject: Transmittal of Engineering Change Proposals - Contract CT-22

Transmitted herewith for your consideration and approval are two copies of each of the following change proposals:

I. PROPOSED FOR CEILING PRICE NEGOTIATION:

TARGET PRICE

ECP No.	Title	Proposed Ceiling Price
22-1-1	[redacted]	[redacted]
22-2-1		
22-3-1		
22-4-1		
22-5-1		
22-10	Suit Vent Air System Regulator	
22-14	Revised INS Rack Installation	

STAT

STAT

II. PROPOSED AS BUDGETARY ITEMS

ECP No.	Title	Budgetary Estimate
22-11	Oxygen System Balance Valve	[redacted]
22-12	Thinner, Lighter Parachute	
22-13	Increased Forward Look Study - Periscope	
22-15	[redacted]	

STAT

STAT

cc: [redacted]

Incl copies of previously submitted ECP Nos. 22-6, 22-7, 22-8 and 22-9.

Kelly

USE PREVIOUS EDITIONS

CLASSIFIED MESSAGE

SECRET

ROUTING			
1	DTech	9	CS
2	/	10	DDS&T
3		11	"
4	Commo	12	RB
5	"	13	
6	DPA	14	
7	OEC	15	
8	MD	16	

ROUTINE

DATE 2143Z 11 DEC 64

25X1

TO : DIRECTOR

FROM :

ACTION:

INFO :

25X1

25X1

TOR: 2222Z 11 DEC 64

OSA 1-15

IN 62238

TO INFO CITE

25X1

FOR

SUBJECT: VOICE RECORDER

1. TESTS ON SEVERAL SMALL MAGNETIC TAPE RECORDERS HAVE LED TO THE SELECTION OF THE NO. 7450-511-7797 DICTAPHONE PORTABLE TAPE RECORDER, DICTETTE. THIS SELECTION WAS BASED ON SUCH FACTORS AS DURABILITY IN THE ANTICIPATED ENVIRONMENT, ADAPTABILITY TO THIS SPECIFIC USE, PERFORMANCE, AVAILABILITY AND COST.

2. THIS IS A RUGGED AND WELL BUILT UNIT, AND HAS BEEN USED WITH SUCCESS IN THE FLIGHT TEST PROGRAM.

3. MINOR MODIFICATIONS TO THE PRODUCTION UNIT ARE REQUIRED TO PERMIT ITS USE IN THIS APPLICATION. THESE MODIFICATIONS INCLUDE:

A. REWIND TAPE MAGAZINES WITH 1/2 MIL MYLAR TAPE IN LIEU OF STANDARD 1 MIL TAPE. THIS DOUBLES NORMAL CAPACITY, CHANGING IT FROM 20 TO 40 MINUTES.

B. ADJUST TAPE DRIVE MOTOR GOVERNOR SPEED. THIS INCREASES CAPACITY TO ONE HOUR. ANOTHER MODIFICATION, A CHANGE IN THE MOTOR GEARING, HAS PERMITTED A FURTHER TIME EXTENSION TO 1.25 HOURS, BUT DEGRADATION OF QUALITY IS THEN APPARENT SO

SECRET

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

9

 COPY NO.

25X1

THIS IS NOT RECOMMENDED.

C. ADAPT UNIT TO OPERATION FROM AIRCRAFT'S 28 VDC POWER, ELIMINATING THE CONTAINED BATTERY. THE CAPACITY OF THE BATTERY IS NOT COMPATIBLE WITH THE INCREASED TAPE CAPACITY. IN ADDITION, THE CHANGE IN BATTERY CONDITION THROUGHOUT ITS USEFUL LIFE INTRODUCES A CHANGE IN TAPE DRIVE MOTOR SPEED, WITH RESULTANT DISTORTION.

4. ONE RECORDER HAS BEEN SO MODIFIED. A MULTI-CONDUCTOR CABLE HAS ALREADY BEEN ADDED TO PERMIT PLUGGING IT INTO ALL AIRCRAFT AS PART OF THE AUDIO CLEAN-UP BULLETIN.

5. THIS MODIFIED RECORDER HAS BEEN FLIGHT TESTED AND IS DEEMED TO BE SATISFACTORY. IN THE FLIGHT TEST PROGRAM WE HAVE BEEN RECORDING ALL RADIO TRANSMISSIONS AS WELL AS INTERPHONE TALK. THE RECORDER HAS BEEN TRIGGERED BY OPERATING THE MIKE BUTTON. SO USED, DATA FROM A 1.25 HOUR FLIGHT OCCUPIED ABOUT 10 MINUTES OF TAPE TIME. WE PLAN TO ADD ANOTHER SWITCH FOR OPERATIONAL USE THAT WILL PERMIT THE PILOT TO SELECT USE OF THE RECORDER AT WILL. THIS SHOULD PROVIDE A STILL BETTER RATIO OF FLIGHT TIME TO RECORD TIME.

6. EARLIER TESTS ON A VOICE OPERATED RELAY RESULTED IN ABANDONING USE OF THIS DEVICE BECAUSE THE TRIGGER LEVEL COULD NOT BE REDUCED TO BELOW THE NOISE THRESHOLD LEVEL OF THE OXYGEN BREATHING EQUIPMENT.

7. TAPE DESTRUCT TESTS HAVE BEEN CONDUCTED, USING A TAPE MAGAZINE IN WHICH THE TAPE IS WOUND BETWEEN TWO PLATES OF PYROFUSE FOIL. WHEN ACTUATED ELECTRICALLY, THERMO-CHEMICAL ACTION OF THE FOIL BURN WITH HIGH HEAT AND MELTS THE TAPE. [redacted]

25X1

SUFFICIENT THICKNESS, [redacted] TO ACHIEVE 100 PERCENT DESTRUCTION IN THE MAGAZINE HAS NOT BEEN FULLY SUCCESSFUL BECAUSE BURNING CANNOT BE SUSTAINED FROM A SINGLE SQUIB. WE ARE CURRENTLY CONDUCTING TESTS USING A LAMINATE OF [redacted] EACH LAYER BEING IGNITED SEPARATELY. WHEN WE ARE SATISIFIED THAT WE HAVE A SATISFACTORY DESTRUCT SYSTEM, WE PLAN TO SACRIFICE ONE DICTETTE TO DETERMINE ITS HEAT SINK CHARACTERISTICS AND TO ESTABLISH THE EXTENT OF PROBABLE DAMAGE TO SURROUNDING STRUCTURE SHOULD THIS BE TRIGGERED ACCIDENTALLY. 25X1

9. DICTETTES ARE READILY AVAILABLE FROM A LOCAL SOURCE.

END OF MESSAGE

Next 10 Page(s) In Document Exempt

Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

OSA - 5[illegible]

3 December 1964

To: Contracting Officer - Contract CT-22

Subject: TRANSMITTAL OF ENGINEERING CHANGE PROPOSALS

Transmitted herewith for your consideration and approval are four (4) copies of the following Change Proposals. These ECP's are proposed on a Target/Ceiling Price basis.

ECP No.	Title	Contract CT-22 ECP Ceiling Price	Estimated Related Program Costs (Other Contracts)	Estimated Total Program Costs
22-7-2	ARC-50 Ground Stations			
22-9-2	Lightning Tests			
22-11-1	Oxygen Balance Valve			
22-12-1	A-12 Parachute Program			
22-13-1	Periscope Improvements			
STAT 22-23				
22-24	Drag Chute Deploy Handle			
22-27-1	Map Case Destruct System			

STAT

STAT

ILLEGIB

cc:

OSA-5535-64

2 December 1964

To: Contracting Officer, Contract CT-22

Subject: TRANSMITTAL OF ENGINEERING CHANGE PROPOSALS

Transmitted herewith for your consideration and approval are four (4) copies of the following Change Proposals. These ECP's are proposed as budgetary items.

ECP No.	Title	Contract CT-22 ECP Budgetary Estimate	Estimated Related Program Costs (Other Contracts)	Estimated Total Program Costs
22-30	Compressor Inlet Pressure Indicating System			
22-35	All Attitude Fuel Quantity System			
22-36	Airplane Control System Checkout Carts			
22-43	[redacted]			
22-49	Fuel Management Revision			
22-58	Oil Pressure Transmitter			
22-62	AF-12 Seat and Parachute Revision (Previously sent to Temp with letter from Rus)			
22-63	Fuel Cooler (Previously sent to John with letter from Kelly)			
22-64	Fuel Qty. Mod.to KC-135's			
22-65	ARC-50 Mod. to KC-135's			
22-66	Alternate Steering for AF-12's			

STAT

STAT

STAT

cc: [redacted]

OSA -5534-64

3 December 1964

To: Contracting Officer - Contract CT-22

STAT

Subject: TRANSMITTAL OF ENGINEERING CHANGE PROPOSALS

Transmitted herewith for your consideration and approval are four (4) copies of the following Change Proposals. These ECP's are proposed on a Target/Ceiling Price basis.

ECP No.	Title	Contract CT-22 ECP Ceiling Price	Estimated Related Program Costs (Other Contracts)	Estimated Total Program Costs
22-7-2	ARC-50 Ground Stations			
22-9-2	Lightning Tests			
22-11-1	Oxygen Balance Valve			
22-12-1	A-12 Parachute Program			
22-13-1	Periscope Improvements			
STAT 22-23				
22-24	Drag Chute Deploy Handle			
22-27-1	Map Case Destruct System			

STAT

STAT

cc:

OSA -5535-64

2 December 1964

To: Contracting Officer, Contract CT-22

Subject: TRANSMITTAL OF ENGINEERING CHANGE PROPOSALS

Transmitted herewith for your consideration and approval are four (4) copies of the following Change Proposals. These ECP's are proposed as budgetary items.

STAT

	ECP No.	Title	Contract CT-22 ECP Budgetary Estimate	Estimated Related Program Costs (Other Contracts)	Estimated Total Program Costs
	22-30	Compressor Inlet Pressure Indicating System			
	22-35	All Attitude Fuel Quantity System			
	22-36	Airplane Control System Checkout Carts			
STAT	22-43				
	22-49	Fuel Management Revision			
	22-58	Oil Pressure Transmitter			
	22-62	AF-12 Seat and Parachute Revision (Previously sent to Temp with letter from Rus)			
	22-63	Fuel Cooler (Previously sent to John with letter from Kelly			
	22-64	Fuel Qty. Mod.to KC-135's			
	22-65	ARC-50 Mod. to KC-135's			
	22-66	Alternate Steering for AF-12's			

STAT

STAT

STAT cc:

DEPARTMENT OF THE AIR FORCE
WASHINGTON

OFFICE OF THE UNDER SECRETARY

November 24, 1964

MEMORANDUM TO DIRECTOR, PROGRAM B

SUBJECT : Approval of Engineering Changes to OXCART

As Director of Program B, you are responsible for reviewing all ECP's and ECO's prior to approval or disapproval determinations. Because of the importance of the control of engineering changes at this stage of the OXCART program, I desire that you modify your existing procedures so that I may have an opportunity to review all major ECP/ECO's being considered. Effective immediately, any change order estimated to exceed a total cost of [redacted] NRO 25X1 that applies to the Lockheed contracts will require my approval before execution. All changes [redacted] NRO 25X1 will continue to be approved under your personal authority. I request that you do not delegate this authority any further.

Proposed changes requiring my approval will be submitted as necessary and should include the results of your review together with your recommendations for approval or disapproval. In addition, I require that you report to me all changes which you have approved and on a reasonably current basis. 25X1

Brockway McMillan
Director
National Reconnaissance Office

25X1 [redacted]

25X1

3 of 4 copies

25X1

DOD DIR. 5200.10 DOES NOT APPLY

Control No. [redacted]

Returns c/o

OSA - 0294-64

8 January 1964

ILLEGIB

To: John Parangosky

STAT

Subject: Transmittal of Budgetary Engineering Change Proposals
Contract CT-22

Transmitted herewith for your consideration and preliminary approval are two copies each of the following engineering change proposals:

STAT

ECP No.	Title	Budgetary Estimate
22-1		
22-2		
22-3		
22-4		
22-5		
22-6		
22-7	ARC-50 DME Improvement	
22-8	L.O.X. Installation in #132 & #133	
22-9	Lightning Tests	
ECP Totals		

STAT

Our effort on these ECP's is being charged to Contract CT-22. You will appreciate that these are all budgetary estimates which we will finalize as soon as the scope of effort can be determined.

We deem it advisable to prepare these preliminary ECP's in a very brief form to afford you and your staff the opportunity to remain knowledgeable of the numerous special packages in process and of the "ball park" cost involved.

Many of these installations are being installed in airplane #131. We propose to accomplish the necessary flight test of these packages against Contract FT-21.

Very truly yours,

NRO 25X1

Next 1 Page(s) In Document Exempt

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STAT

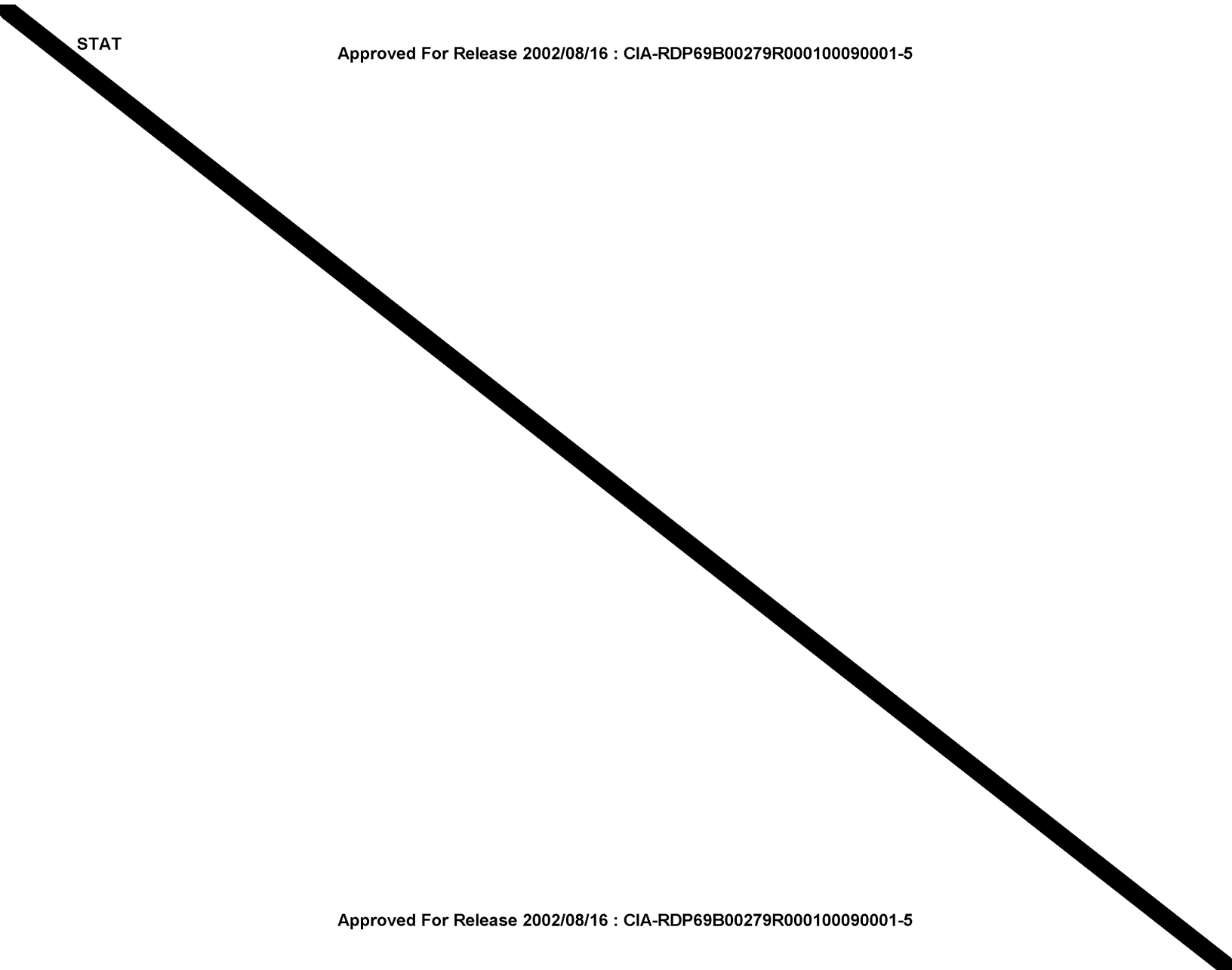
Summary Of DK-3559 ECP's To Be Negotiated (Cont'd)

Misc. Approval No.	ECP No.	Title	Budgetary Price Per 1 June 1963	Tentative Or Proposed ECP Price	
		Repairs to #122 Wet Map Case			(2)
STAT					(2)
					(2)
					(2)
		(*) Added Mission Equipment			Above
		J-58 Retrofit #121 & #124			
		Retrofit ADP Inlet Control			
		EGT Prod. Incorporation			
		Totals			

(1) Already submitted.

(2) Work already started on verbal approval or otherwise.

RTP 9-9-63



Approved For Release 2002/08/16 : CIA-RDP69B00279R000100090001-5

been forwarded to Edwards AFB for use in IDEALIST vehicles. This initial test work is not being agressively pursued by Lockheed and indications are that final system installation is in the distant future.

4. Operational training is highly desirable in the use of both the maps (changes in format) and storage/destruct systems prior to operational employment. OXCART programming indicates the systems should be installed at once in Aircraft 124, 122, and 125. IDEALIST use can commence as soon as the systems are installed on a retrofit basis.

5. It is recommended that the Development Division establish the necessary priority with Lockheed to accomplish completion of this project. It is further recommended that 25X1 [redacted] be requested to monitor and report weekly on the progress in this regard [redacted] Concurrence of the Assistant Director, OSA, is requested. 25X1

25X1 [redacted]

Chief, Operations Division, OSA

CONCUR:

25X1 [redacted]

JACK C. LEDFORD
Colonel USAF
Assistant Director
(Special Activities)

8 FEB 1963

25X1 OSA/OD/OXC/[redacted] (6 February 1963)

Distribution:
#1 - OSA/C/OD
#2 - AD/OSA
#3 - OSA/C/DD
#4 - OSA/C/CD
#5 - OSA/OD/IDEA
#6 - OSA/OD/OXC
#7 - OSA/OD/OXC (Chrono)
#8 - OSA/RB

TOP SECRET

OXC-4259-62
Copy 7 of 9

11 December 1962

MEMORANDUM FOR THE RECORD

SUBJECT: OXCART Charts

25X1NRO 1. A meeting, arranged through the auspices of AFCIG-5, was held in the office of AFCIN-1, on 10 December. Those in attendance were: AFCIN-1; Lt. Colonel 25X1NRO 25X1 AFCIG- AFCIN-1C4; 25X1 CIA ACIC; and 25X1 25X1 CIA.

2. The meeting was concerned with working out problems connected with printing certain JN charts for the OXCART Project. A comprehensive review of the problems and requirements was achieved, with the following results:

(a) ACIC will be given authorization to print the required charts and will further be authorized to contract out normal chart printing that otherwise would occupy the presses.

25X1

(c) A target date of 1 April 1963 was established as being the goal for delivery of the water-soluble charts, predicted on a 1 February delivery of the paper to ACIC.

(d) A target date of 1 February 1963 was established as the date for delivery of certain ZI JN charts, printed on regular stock in the color format to be employed on the soluble charts, for pilot training and familiarization.

TOP SECRET

3. Memoranda to ACIC, through AFCIG-5 and AFCIN, will be prepared shortly, establishing definitive requirements for printing, both for training charts and soluble charts.

SIGNED

[redacted]

25X1

Intelligence Staff/OSA

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5 DEC 1962

MEMORANDUM FOR: Assistant Director, OSA

SUBJECT: Water Soluble Maps

1. This memorandum contains recommendations for the approval of the Assistant Director, OSA. Such recommendations are contained in paragraph 5.

2. This status report relates to the development progress of the water soluble map program.

a. The initial test production at ACIC has been completed and samples of the JN-47 have been provided field activities at Edwards Air Force Base [redacted] 25X1
Since Lockheed has not completed the aircraft installation to receive these water soluble maps, present field tests will be restricted to handling qualities and format only. It is estimated that the Lockheed systems will be installed in both type aircraft no earlier than 1 February 1963.

b. It is planned to proceed with ACIC production of 33 JN charts and 6 GNC charts which cover the Eurasian land mass. The following planning factors have been provided in connection with this production:

(1) Initial production can commence 15 January 1963.

(2) Total production time sixty days.

(3) Production cost approximately [redacted] 25X1

3. Procurement action has been initiated to purchase 16,000 sheets of paper to be delivered approximately 15 January 1963 - cost approximately [redacted] 25X1

4. Due to the long lead time of ACIC chart production it seems wise to proceed with that phase of this program

SECRET

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even though field functional tests have not been performed. Continued emphasis will be placed upon the Lockheed proposal and production of the map case and associated water system.

5. It is recommended that the following tasks to be accomplished be approved:

a. Complete procurement action on the special paper (OSA/MD).

b. Attend AFCIN scheduling meeting 10 December 1962 to assure ACIC production (OSA/OD, OSA/INTEL, and AFCIG-5).

c. Approve expenditure of funds for this program (AD/OSA).

d. Encourage Lockheed to expedite system installation in U-2 and A-12 (DD/OSA).

25X1

[redacted]

Chief, Operations Division, OSA

The recommendations contained in paragraph 5 are approved:

5 DEC 1962

JACK C. LEDFORD
Colonel USAF
Assistant Director
(Special Activities)

25X1

OSA/OD/OXC/[redacted] (5 Dec 62)

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